Home Computing WEEKLY

An Argus Specialist Publication

Every week: your best buy for software reviews and listings

Special issue
Listings extravaganza

No. 87
Nov 6-12, 1984

45p

CBM 64 game of logic
Plumbers nightmare

VIC-20 space frenzy
The aliens are coming!

Utilities for Spectrum, Amstrad, ZX81

Thinking games for Amstrad, Atari, Dragon, TI-99/4A

Warlock competition
40 bumper packs of four games must be won!

Reviews for:
Spectrum, CBM 64, BBC, Electron, TI-99/4A

Push-button Software

Software will soon be available at the push of a button if a new invention lives up to its claims.

The machine is called Soft-Shop and is marketed by a company called Rose Tech. It stores tapes which can be loaded on the spot from a selection of at least 200 games.

The customer buys a ticket from the counter and inserts it into the machine. The Soft-Shop displays a simple set of instructions which help the customer select from a number of games on cartridge or cassette within a certain price range.

Once the customer has selected a game the machine commences loading, which is done at 16 times the normal speed, making the whole process last less than a minute.

The Soft-Shop also provides an inlay card, for the customer to fill in, and an instruction booklet.

Michael Marks, managing

Continued on page 5

Di's secrets under threat

Princess Di's spending secrets are worth £500. That's the offer made to a computer hacker by a West German magazine — rumoured to be Stern — according to a new magazine. But the 'electronic burglar' turned the offer down and Princess Di's spending habits remain a secret.

The German magazine, it said, commissioned the hacker to break in to the computerised records of Princess Di's credit cards and reveal all. He refused to co-operate and wishes to keep a low profile over the whole matter so that he can continue his hacking in private.

As a leading hacker is quoted as saying in TeleLink: "People are getting confused between computer criminals and hackers. Whereas the criminals will do it for money, we do it for the same reason that people climb mountains — because of the challenge, not for personal gain."

And Buckingham Palace praised the hacker's integrity. "It's very interesting to learn

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Hill MacGibbon

Games with a little bit more

King Arthur's Quest

Games with a little bit more

Aztec

Hunt for the sun god

48k SPECTRUM £7.95
COMMODORE 64 £9.95

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Sports simulations that leave the rest standing

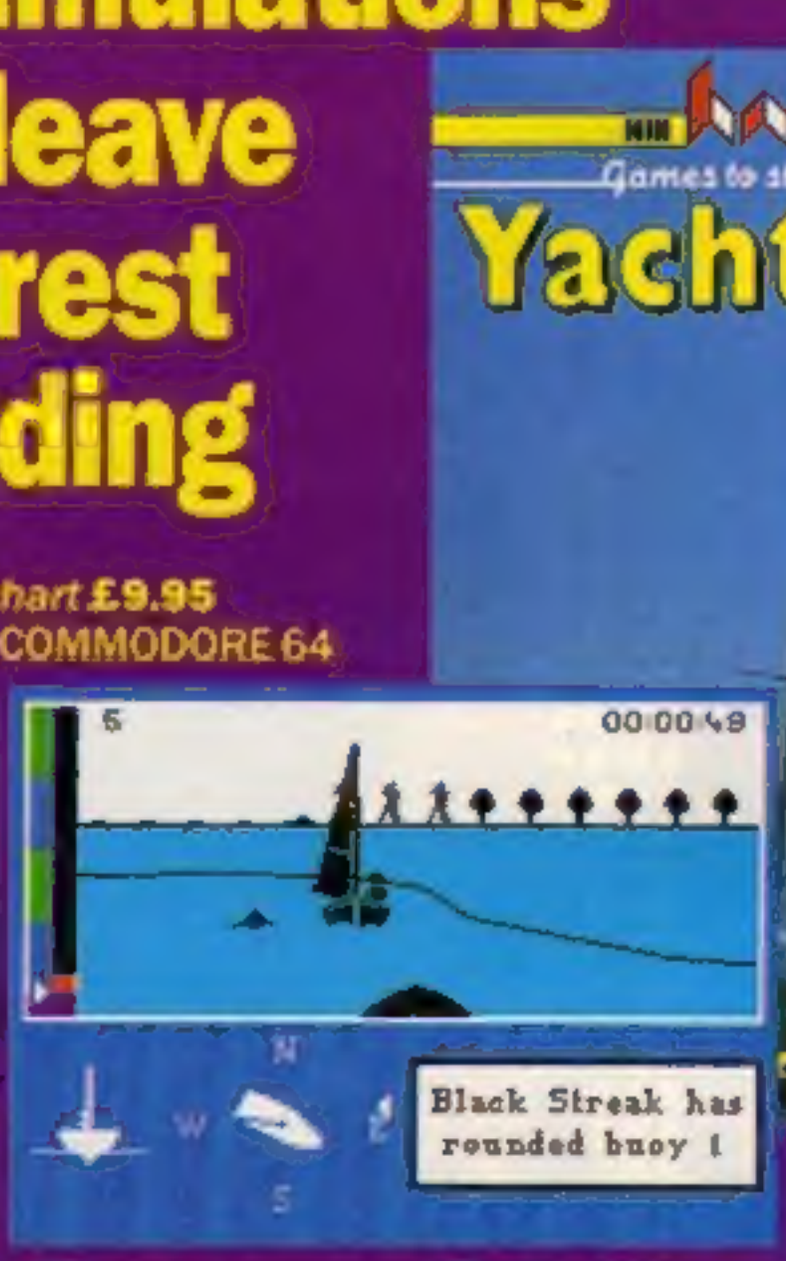
Games to stretch the mind

Rally Driver

Cassette & map/chart £9.95
48k SPECTRUM COMMODORE 64

Games to stretch the mind

Yacht Race



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Software houses: send your software for review to the editorial office at the address below. Contact us for competitions and other promotions, too

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BRITAIN'S BRIGHTEST

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Di's secrets

From front page

that the person concerned turned the offer down," a spokeswoman told Home Computer Weekly, "and it was quite right that he should have refused. It's obviously an invasion of privacy."

TeleLink is a new bi-monthly magazine, costing £1, which will cover telecommunications in all its forms. Computer hacking has hit the headlines this year with incidents of youngsters breaking in to military computer systems — and of course was the theme of Superman II and Wargames.

A modem and home computer are vital pieces of equipment — then it's all down to knowhow. TeleLink affirms that these days hackers are being coaxed into preventing security lapses which are now inevitable through the skill of hackers.

Managing director of Database Publications, Derek Meakin, was enthusiastic about his new venture. "We see this publication as opening up a whole new world for microcomputer owners. People now want to widen their horizons from just playing games, and here is something really exciting and useful which can be undertaken by a micro with the aid of a low priced modem device."

Push-button

From front page

director of Rose Tech, said: "We have enlisted the support of several software houses, and there should be some top 50 games in the selection. The first 60 should be in the shops by January or February." Mr Marks added: "By the end of 1986 we expect to have installed 1,500 machines."

W H Smith has agreed to take one of the machines on trial and several other major companies are interested including Dixons, Menzies and Heron Garages.

Soft-Shop tapes are equipped with an anti-piracy device, a feature which similar machines under development are said to lack. Mr Marks said: "We are the only company with an anti-copying system."

Mr Marks is convinced that the machines are totally reliable. He said: "It is extremely important because if they are not, the shop would be left without stock. The printers are the same ones used in the cash-point machines, and all the other parts have a history of reliability as well."

Games from down under

There's an Australian connection at Interdisc: The company which published Hercules has now negotiated with Simulated Graphics of Melbourne and will be releasing four Commodore 64 games at the beginning of November. The games will be launched under the joint title of Simulated/Interdisc.

Of Black Knight, Interdisc says it's "the greatest animation ever seen, with 16 sprites being used to move one character." African Safari "makes Hobbit look like a dwarf," according to Interdisc, while Star Force/Gammeron is "a double barrelled shotgun of purist space action." It's a twin-pack of shoot-'em-up games, and all three packs will cost £9.95.

Interdisc, Kensaltown Works, 249-251 Kensal Rd, London W10 5DS

Koala bonus

Audiogenic has now provided extra incentive to buy the Koala Pad: standard extras now include the Koalaprinter utility and the Koala Instant Programmer's Guide, as well as Koalapainter software.

Available for the Commodore 64 exclusively through Audiogenic, the package costs £79.95 and is available with cassette or disc. A new modification is that circles will now be truly circular instead of elliptical.

The Koalaprinter allows you to print out your graphics, while the programming guide describes how you can use the Koala Pad as an input device in your own programs.

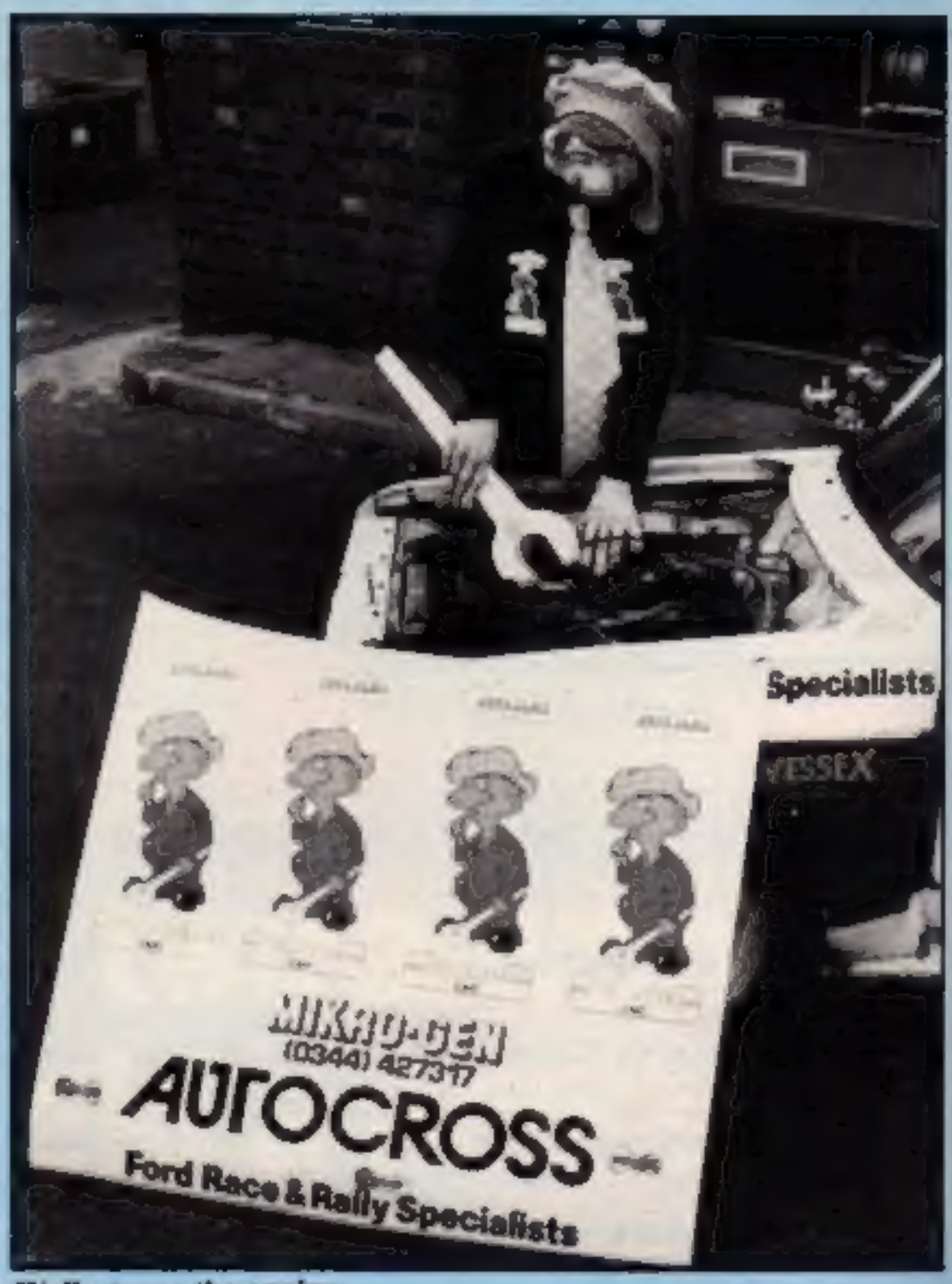
Audiogenic, 39 Suttons Ind Park, London Rd, Reading, Berks RG6 1AZ

Wally behind the wheel

With the increasing competition between software houses to sell you their software, Mikro-Gen has moved into the field of sponsorship with its own racing car.

Mikro-Gen's car has successfully entered the Belgium Mandes Championship and the Belgium Glosso Championship. Wally Week, Mikro-Gen's star of Pygamarama, said: "I have been known to lend a hand with the actual mechanicals, but I have had great difficulty finding nuts to fight my spanner."

Mikro-Gen, 44 The Broadway, Bracknell, Berks



Wally tunes the engine

Row over Chiller rights

A controversy has blown up surrounding Mastertronic's best selling game Chiller for the Commodore 64.

Rocksoft, a company formed to protect musical publishers and their copyrights, has issued a statement claiming that Chiller has been withdrawn and a substantial out of court settlement has been agreed between the two companies.

Rocksoft claims that the soundtrack of Mastertronic's game is so similar to the Michael Jackson hit Thriller that it cannot be a coincidence. Rocksoft says that Mastertronic used the Thriller music without obtaining a licence.

Mastertronic is adamant that none of this is true. Frank Herman, chairman, said: "It has been brought to our attention that the computer sounds produced in this program are similar to the music copyrighted by Rondor Music called Thriller. Therefore we have agreed to negotiate a royalty in respect of this, and to use different music so that we don't infringe anyone's copyright."

Peter Jones, Mastertronic spokesman said: "At no time has the game been withdrawn. Rocksoft's statement is totally untrue."

Martin Alper of Mastertronic continued: "It is categorically denied that we agreed out of court settlements. We take great exception to their statement — what we have done is agreed to pay royalties on the games sold so far — but we have now changed the theme music on the game anyway."

Martin Humphrey, Rocksoft's general manager, said that if Mastertronic has changed the music then the game no longer concerns Rocksoft. However, he added: "I do not call it royalties because they are supposed to have a licence before they use the music."

Mastertronic's Chiller is the showpiece of the £1.99 range of

budget priced software and the game's sales have already topped the 30,000 figure.

Mastertronic, Park Lorne, 111 Park Road, London NW8 7JL

Rocky Horror Show

After Activision's announcement of a game from a new cult movie, Ghostbusters, CRL has announced its plans to release the game version of a very long-standing cult film, The Rocky Horror Picture Show.

Notorious, particularly in the States, for its following of devotees who dress for the part and sing and dance along with the show, the Rocky Horror (film) show has been a box office success for many years. CRL is obviously intending to latch on to that fervour with its game.

Cement Chambers, CRL managing director, said: "Films such as Saturday Night Fever were a hit when they were an X, but they were also successful when they were awarded an A-certificate. The Rocky Horror show can make an entertaining horror game without actually portraying all the horror."

Transvestism and bondage were portrayed in the film, and the game will have to be watered down for a home audience. CRL also has the rights to the Magic Roundabout and Terrahawkes, the updated version of Thunderbirds and it is clear that licencing deals are becoming increasingly important not only for CRL, but also a number of software houses.

CRL, 9 Kings Yd, Carpenter's Row, London E15 2HD

Modem for £50

Unicom has announced the launch of its full facility modem, costing 49.99. Features include: auto dial, auto redial, auto answer, auto band rate scan, full duplex, half duplex, bulletin board cailty, number memory store, compatibility with all UK, USA and European standards, power supply, leads and manuals.

Unicom claims that the modem is easy to understand and use. It automatically redials until connected and you can dial your own or other micros by remote facility to upload or download software.

Unicom, 20 Orange St, London WC2H 7ED

Unicom modem

Quest for perfection

Launched to compensate for the deficiences of the QL, Quest's executive series is intended to make the QL a much more attractive proposition for the small business user.

Memory expansion units, storage devices, assemblers and compilers, as well as business software, are all available at a price which will mean that the QL can be used as a "serious" business machine for £500, according to a QL spokesman.

Also available is a service agreement which will enable the user to come back to Quest with problems and queries — a back-up service not possible with computer shops.

Quest, School Lane, Chandler's Ford, Hants SO5 3YY

Commodore backs schools quiz

Commodore has pledged its sponsorship for the 1985 British Computer Society Schools' Computer Quiz.

"Commodore is delighted to be associated with the British Computer Society!" said Mark Horne, Business and Education Manager for Commodore. "The quiz demonstrates our mutual objective of helping schools to own their own computers, ensuring that children, whatever they study, have the opportunity to master the mysteries of the micro at an early stage!"

What you have to do is enter a Top of the Form-type quiz. Each school must select a team of three pupils with ages ranging from under 15 to under 17.

Local area heats will begin in November and 40 area finalists will receive a Commodore communications modem. Next step is the regional finals, of which eight regional winners will get CBM 64 computers and 1541 disc drives.

From the national final, due to take place in July 1985, will emerge a first prize-winning school, and the star prize is £1,600-worth of Commodore equipment.

Derek Harding, secretary general of the British Computer Society, said: "The BCS quiz has grown dramatically during the last two years, and now with Commodore's support it will become a major national event, bringing the world of computers closer to young people."

Commodore sees the quiz as an ideal opportunity to promote its commitment to more computers in schools. Its total sponsorship amounts to over £50,000.

British Computer Society, 13 Mansfield St, London W1M 1HP

Budget software

Another software house has announced that it will be selling software at £1.99. Micro Mart Software has announced a range of 10 titles for Spectrum, Commodore 64 and BBC.

Errol Dyer, senior partner, said: "We are the first software house to publish educational software at budget prices."

Micro Mart has the backing of a large European company and its range will be distributed throughout Europe.

The first 10 programs will include three educational titles, five arcade games, one graphic adventure and a family game.

Micro Mart Software, 84 New Rd, Kidderminster, Worcs DY10 1AE

Raffle for the QL

The next ZX Microfair will be held at Alexandra Palace on the weekend of 17-18 November. It's the 14th Microfair and features over 120 exhibitors.

Help a London Child, the charity sponsored by Capital Radio, has a stand and is selling raffle tickets for over £2,000-worth of computer equipment. Richard Allinson will present the prizes on Sunday 18th November, and all proceeds go to charity.

New software

Highway Code, a new CRL program for the Spectrum and Commodore 64, has gained the approval of the Automobile Association.

The program, which costs £5.95, consists of more than 100 questions and the user is given a percentage rating on the answers.

Graphics illustrate road signs and traffic situations.

CRL, 9 Kings Yard, Carpenter's Road, London E15 2HD

The ZX Spectrum
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Written by Tasman Software Ltd.
Usual price (RRP): £13.90.

Games Designer

Now, all you need to create original games are original ideas – and Games Designer! It has eight, very different, pre-programmed games for you to play as they are – or modify out of all recognition!

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Written by Quicksilva Ltd.
Usual price (RRP): £14.95.

Masterfile filing system

Address lists...personal files...stock inventories... stamp or album collections...club records...recipes ...if you can file it, you can Masterfile it!

Masterfile is a menu-driven filing and retrieval system of immense power. Display formats are user-defined, so the range of applications is enormous.
Written by Campbell Systems Ltd.
Usual price (RRP): £16.95.

Ant Attack

The all-time classic 3D strategy game. Ant Attack combines stunning Escher-like graphics with fast-moving action and a real tactical challenge.

Your task is to enter the walled city, seek out your captured partner, and escape. At all times you can choose from four angles of view. But beware: the city is patrolled by giant ants...
Written by Quicksilva Ltd. Usual price (RRP): £6.95.

All programs run on a 48K Spectrum or Spectrum +. Recommended retail prices are for each program on cassette.

...includes this great set of Microdrive programs!

The unique ZX Microdrive system sets the Spectrum apart from all other home computers.

It gives you all the advantages of floppy disc drives – at a fraction of the cost. And tests show the Microdrives are faster than some disc drives.

Now, the complete Microdrive system comes in one package – together with four of the best-ever Spectrum programs, on Microdrive cartridges.

This software alone would normally cost you over £50. Yet the Sinclair price for the complete ZX Spectrum Expansion Pack is just £99.95!

You'll find full details of its contents in the panel opposite.

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Each Microdrive cartridge holds at least 85K bytes of data or programs (that's 30 pages of A4 text). And you can store up to 50 different data files per cartridge, identified by titles of your choice.

Every cartridge comes in its own protective case. Simply remove the cartridge, slot it into the Microdrive, and it's ready to use.

ZX Interface 1–adds powerful new capabilities to your Spectrum.

ZX Interface 1 connects to the back of your Spectrum and controls up to 8 Microdrives. (Additional Microdrives are available for £49.95 each.)

It also gives you:

- An RS 232 interface – to link your Spectrum with full-size printers, other computers using RS 232 (the industry-standard interface) and provide data transmission over telephone lines, via modems.
- ZX Net – lets you set up a local area network of up to 64 Spectrums, for high-speed data communications between you and Spectrum-owning friends.

At your local Sinclair stockist–today!

The ZX Spectrum Expansion System adds an exciting new dimension to Spectrum and Spectrum + computing. At £99.95 it's superb value too.

To find out more, call in at your local Sinclair stockist now!

Sinclair Research Ltd,
Camberley (0276) 685311.

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Three educational titles from Kosmos: The French Mistress, The German Master and The Spanish Tutor, have been released for the Commodore 64, joining the versions for the BBC, Electron and Spectrum. Each language is covered by two cassettes and they cost £8.95 each. Conversions for the MSX range, Amstrad and Dragon are to follow early for next year.

Kosmos, 1 Pilgrims Close, Harlington, Dunstable, Beds LU5 6LX

New from Channel 8 for the Commodore 64: Time Zone, a fast-action shooting game, Phase 4, which is four arcade games in one, and Borzak, converted from the Spectrum. All cost £6.95. Channel 8 says that the Mysterious Adventures series can now be supplied for the Atari, BBC, Sord M5, Commodore 64, Dragons, Oric/Atmos and Spectrum.

Channel 8, 51 Fishergate, Preston, Lancs PR1 8BH

Quango, Guzzler and Plummet are new releases from Interceptor Micros. Costing £7 on tape and £9 on disc, they are arcade games. Quango "is guaranteed to damage wrists and joysticks alike", while Guzzler is a family maze game (both for CBM 64) and Plummet is a Spectrum game in which you must save the mayor of New York who is stranded in a lift shaft.

Interceptor Micros, Lindon Hse, The Green, Tadley, Hants

Android Dreams is the name of a new software house which has just released Expert Sprite Editor for the Commodore 64. According to Mr Bryan, managing director, "the package is very comprehensive and suitable for both expert and beginner games writers."

Android Dreams, 94 Rednal Rd, Kings Norton, Birmingham B38 8DU

Xavior, due for release on November 19, is PSS's new Spectrum title. There are 4,096 rooms through which you must progress, killing the 256 different monsters. Your aim is to collect DNA fragments deposited in the gene room, and ensure the survival of the species. Price: £5.95.

PSS, 452 Stoney Stanton Rd, Coventry CV6 5DG

Pick of the pops

It's often said that there are numerous parallels between the record industry and software and here's another new area in which the two fields are similar: compilation tapes.

Computer Records is a new software house which has released Select 1, a compilation tape featuring 12 hit games. Included on the cassette are Hunchback, Kong, Hexpert and Skramble. Adventures such as Denis through the Drinking Glass, from Applications Software and Ring of Fire from Quicksilva are also included on the tape.

To quote Computer Records, "As well as offering excellent value for money, Select 1 gives both the first-time buyer and the hardened games player a unique opportunity to add 12 respected titles to his or her collection at one stroke!"

The price of this compilation tape is £12.49 and it's available for both Commodore 64 and Spectrum. Select 1 is being marketed in conjunction with Telstar Records, a TV record merchandising company. A national TV advertising campaign costing £500,000 will support the promotion.

The Commodore compilation tape features the Burner speed-loader system, while the Spectrum version comes with indexing software which enables you to locate and load the game automatically.

Select 1 is concentrating on Commodore 64 and Spectrum, with the hope of selling 100,000 tapes before Christmas. Neil Palmer, director, said that the games are exactly the same as if bought individually. The difference is that £70-worth of software is being sold for less than £13.

"Computer game compilation tapes were an obvious expansion for Telstar," said Mr Palmer. "It's our policy to give value for money!"

Computer Records, 21 Napier Place, W Kensington, London W14 8LG

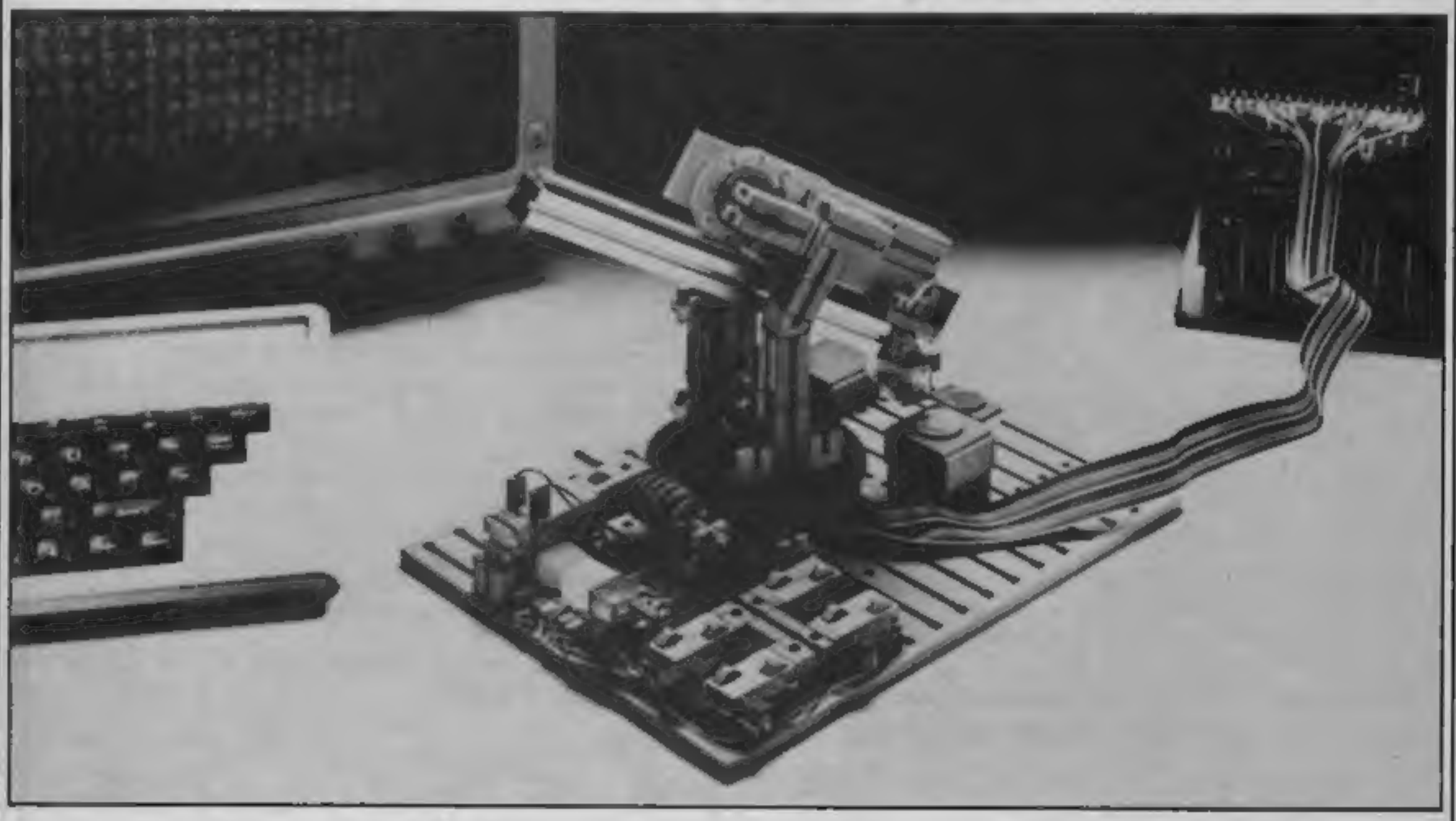
Robot kit

You may well know the name Fischertechnik from TV advertising for children's toys. Now the company has released a computing package from which you can build a robot.

For £64.95 you can buy all the components necessary to build one of six different robot forms. The six forms comprise: a telescopic "teach-in" robot arm; graphics board; simple sorting machine; lifting and sorting robot to solve the legendary Buddhist problem of the Tower of Hanoi; plotter which utilises polar co-ordinates and a tracking mechanism for keeping a solar cell in the correct alignment with the path of the sun.

Most popular home computers can control the kit with an appropriate interface.

Fischertechnik, Fischer Hse, 25 Newtown Rd, Marlow, Bucks SL7 1JY



New robotics kit from Fischertechnik

Platform 5 for computers

W H Smith is expanding its computer shops with the opening of its first branch at a railway station. Opposite platform five at Waterloo, the shop will stay open from 8 am to 8 pm from Monday to Saturday.

Michael Witter, the 22-year-old manager of the Computer Shop, said: "We're very excited about this venture. About 180,000 travellers go through Waterloo station each day and we hope to attract many of them."

Four fully-trained staff will be on hand to offer advice and computers available include Spectrum +, QL, BBC, Electron, Commodore 64 and C16 and MSX, as well as peripherals and software.

MSX starter packs

Thorn EMI has announced it will be offering starter packs for the MSX. The range of three packs include both new and converted programs for entertainment, education and business.

"MSX is a new system with software new to all dealers, and many MSX dealers are new to the micro market," said Henry Kitchen, marketing manager. "With the starter packs we are giving the reassurance that all the software is of a high enough standard to meet the Thorn EMI Computer Software Division's requirements."

The games pack includes PSS's Les Flics, Hustler from Bubble Bus, Quicksilva's Fred and Alligata's Blagger.

Thorn EMI, Thomson Hse, 295 Farnborough Rd, Farnborough Hants GN14 7NF

Briefly

A computer auction is being held at the Bonnington Hotel in Southampton Row, London WC2 on November 28 at 6 pm. Organised by Crocker Computer Auctions, entries are being accepted from shopkeepers as well as the public, and various personal and business machines will be on sale.

Crocker Computer Auctions, 154 Tottenham Ct Rd, London W1

Jack in Magicland is new from Turtle Software. It's an educational text adventure aimed at the 7-12 years age group and has its basis in Jack and the Beanstalk, with appearances made by Aladdin, Ali Baba and others. More than 100 locations are included as well as a parent/teacher guide and a book of cartoon illustrations. Price: £6.95.

Turtle Software, Wychwood, 40 School Rd, Finstock, Oxford OX7 3DJ

Volcano for the 48K Spectrum is Computer Magic's launch title. You must escape through the streets to the safety of an island where the molten lava cannot reach you. Price: £7.95.

Computer Magic, 39 Bridge St, Walton on Thames, Surrey

Sterling software is releasing Orpheus in the Underworld for the Commodore 64. It's an arcade/adventure which involves a treasure hunt through 120 different screens. Price: £6.95. Country Cottages, also from Sterling, is for the Spectrum and Amstrad and is a two-player strategy game about property. Price: £5.95 for Spectrum, £7.95 for Amstrad. Assignment East Berlin completes Sterling's autumn line-up: this is a text adventure for the Spectrum, costing £5.95.

Sterling Software, Garfield Hse, 86/88 Edgware Rd, London W2 2YW

Kuma has brought out a cassette-based Spread Sheet Calculator for the Commodore. At £14.99, the program complements Kuma's Database and Simple Accounts and includes a manual.

Kuma, Unit 12, Horseshoe Pk, Horseshoe Rd, Pangbourne, Berks RG8 7JW

Projector 1 is a business graphics, forecasting and presentation system for the 48K Spectrum. This Microdrive-compatible cassette comes complete with user manual included in the purchase price of £13.95.

Mc-Graw Hill, Shoppenhangers Rd, Maidenhead, Berks SL6 2QL

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PARCO Software

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(* Extended basic.)

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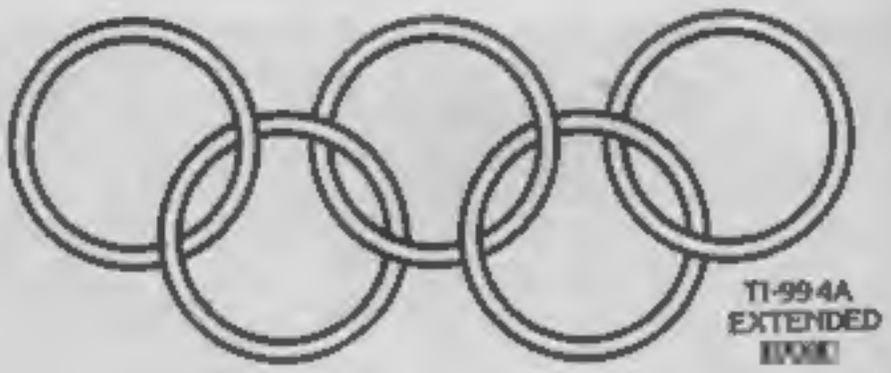

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INTRIGUE SOFTWARE
Cranbrook Road, Tenterden, Kent TN30 6UJ

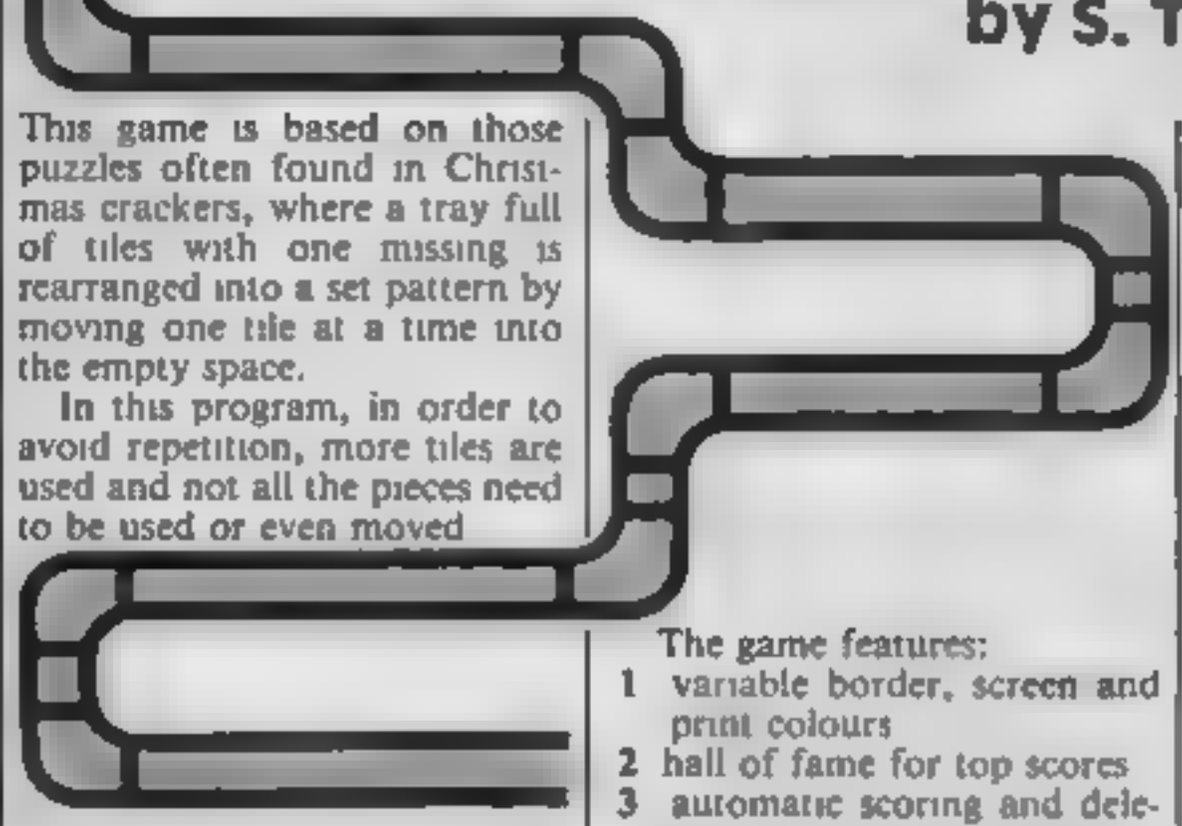
Plumber's nightmare

Connect the tank to the tap with 56 pipes. Sounds easy? You'll need logic and patience in this tricky game

by S. T. Neill

This game is based on those puzzles often found in Christmas crackers, where a tray full of tiles with one missing is rearranged into a set pattern by moving one tile at a time into the empty space.

In this program, in order to avoid repetition, more tiles are used and not all the pieces need to be used or even moved



In the top left corner of the screen there is a tank which must be connected by the pipes on the tiles to a tap in the bottom right corner

The tank and tap can be connected by as many pieces as necessary. The more complex the route, the more points scored. Bonus points are awarded if the tank to tap connection is made

The number of moves available is limited but your time isn't, so logical thinking is needed.

The game features:

1 variable border, screen and print colours
2 hall of fame for top scores
3 automatic scoring and deletion of scoring tiles after the game
4 four skill levels
5 redefinable control keys

Pieces are selected at random before each game. You must pick:

10 vertical straight pipes
10 horizontal straight pipes
36 right-angled pipes (9 of each kind of bend)

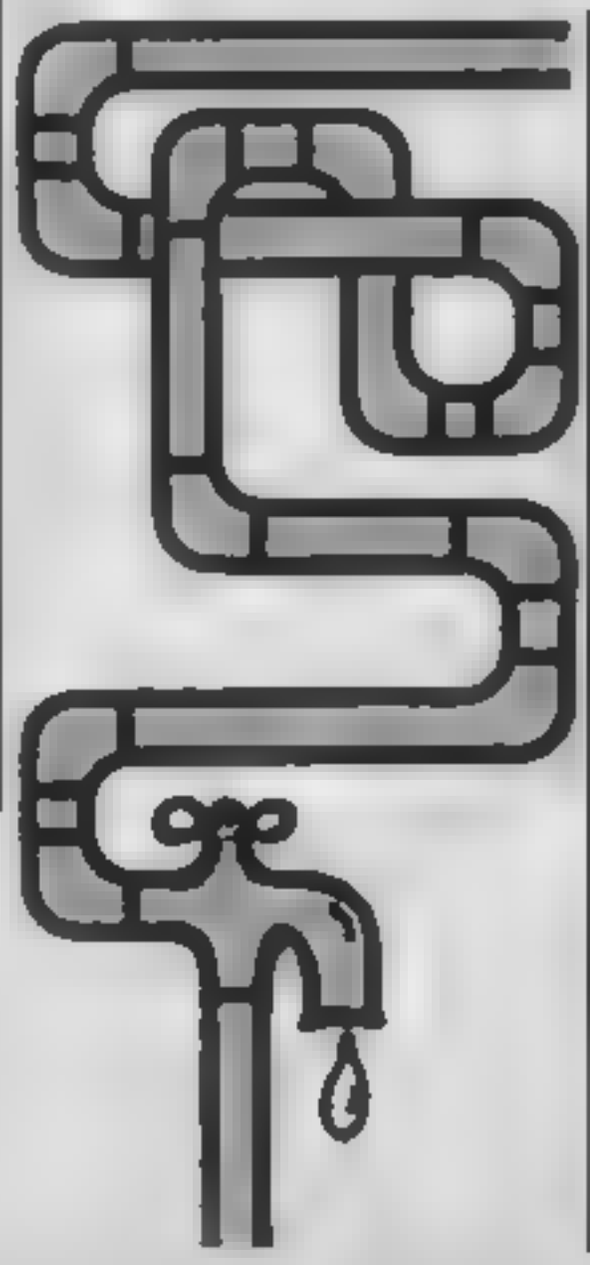
The program should convert very easily to any micro with a 40 x 25 screen display as the BASIC is very straightforward In general, screen and colour POKEs would need to be changed

I hope this game will be a welcome, quiet break from 'zapping' and 'mazing' games, but be warned: it's not as easy as it sounds and can lead to frustration.

Maximum score if you use all the pieces is 58,000.

How it works

10 dimension arrays
20-40 initialisation routines
50 set blank space
60-90 main loop for moving pieces
1000-1120 change control keys routine
1130-1150 read data for pieces routine
1160-1180 set piece positions array routine
1190 read data for type of piece routine
1200-1310 change colours routine
1320 change character colour for entire screen routine
1330 print pieces at start of game routine
1340 print wait message routine
1350-1510 print top scorers routine
1520-1530 get player's name routine
1540-1660 evaluate and print piece routine
1670-1730 random selection of pieces routine
1740-1820 determine and execute player's move routine
1830-1920 select skill level routine
1930-2120 title page routine
2130-2200 print tank and tap routine
2210-2280 score and replay routine
2290-2390 calculate score and remove piece routine
2400 copy duplicate array routine
2420-2540 DATA



Variables

J%(A) array holding piece type
J1%(A) duplicate of J% to avoid rereading data
P%(A,B) array holding screen positions of pieces
S%(A,B) array holding type of piece at P%(A,B)
K%(A,B) array holding data for printing pieces
GT(A) array holding top scores
GT$(A) array holding top scorers
F(A) duplicate array for determining top scores
F$(A) duplicate array for determining top scorers
X,Y current position of blank space
ML number of moves remaining
U$,D$,R$,L$ strings holding key to be pressed for movement of pieces
SC,BO,PR screen, border and character colours
G% intermediate variable for determining type of piece
GT score
TH,Q flags used in calculating scores
U,A,B,T,G,H used in for...next loops
KP$ last key pressed

```
 dimj%(56),p%(11,7),s%(11,7),k%(7,16),gt(11),gt$(11),f(11),f$(11),j1%(56)
20 gosub1930:gosub1340:gosub1130:gosub1160:gosub1190
 gosub1000:gosub1200:gosub1830:gosub1340:gosub2400
40 gosub1320:gosub1670:gosub1330:gosub2130
50 x=6:y=4
59 rem hom cr1
60 print"moves left:";ml;"
70 gosub1740
80 ifml=0then2290
90 goto60
100 end
998 rem crr crd
1000 u$="↑":l$="←":r$="":d$="":pokE53280,1:poKe53281,1:poKe646,5
1009 rem clr
1010 print""tab(14)"control Keys"
1018 rem   2*crd-rvs off
1020 printtab(17)"up - ↑"
1029 rem   2*crd-rvs off rvs off
1030 print"left - ←"tab(22)"crsr right - right"
1039 rem   2*crd-rvs off
1040 printtab(12)"down - crsr down"
1049 rem   2*crd
1050 print"would  you  like  to  change the control";spc(13)"Keys ( y/n )?"
1060 getkp$:ifkp$<>"y"andkp$<>"n"then1060
1070 ifkp$="n"thenreturn
1079 rem   2*crd
1080 input"new up Key";u$:iflen(u$)>1then1080
1089 rem crd
1090 input"new down Key";d$:iflen(d$)>1then1090
1099 rem crd
1100 input"new left Key";l$:iflen(l$)>1then1100
1109 rem crd
1110 input"new right Key";r$:iflen(r$)>1then1110
1120 return
1130 fora=1to7:forb=1to16
1140 readK%(a,b):nextb,a
1150 return
1160 fora=1to10:forb=1to6
1170 p%(a,b)=1064+(a-1)*4+(b-1)*160:nextb,a
1180 return
1180 fora=1to56:readj%(a):next:return
1189 rem clr
1200 sc=1:bo=1:pr=0:print""
1210 getkp$
1218 rem f1
1220 ifkp$=""thensc=sc+1:ifsc=16thensc=0
1229 rem f3
1230 ifkp$=""thenbo=bo+1:ifbo=16thenbo=0
1239 rem f5
1240 ifkp$=""thenpr=pr+1:ifpr=16thenpr=0
1249 rem f7  clr
1250 ifkp$=""thenprint""":return
1260 poKe53280,bo:poKe53281,sc:poKe646,pr
1269 rem hom-  6*crd
1270 print""tab(7)"f1 - changes screen colour"
1279 rem   2*crd
1280 print""tab(7)"f3 - changes border colour"
1289 rem   2*crd
1290 print""tab(7)"f5 - changes print colour"
1299 rem   2*crd
1300 print""tab(7)"f7 - returns to game"
1310 goto1210
```

```
1320 !fora=0to1000!poKe1024+a+54272,peeK(646)!next!return
1329 rem clr
1330 print"■"!forx=1to10!fory=1to6!gosub1540!nexty,x!return
1339 rem clr- 10*crd
1340 print"■■■
```

```
1840 print"■■■■f1 - master plumber              50 moves."
1849 rem   3*crd
1850 print"■■■■f3 - ordinary plumber           100 moves."
1859 rem   3*crd
1860 print"■■■■f5 - plumber's mate             150 moves."
1869 rem   3*crd
1870 print"■■■■f7 - oily rag                   200 moves."
1879 rem f1
1880 getkp$:ifkp$="■"thenml=50:return
1889 rem f3
1890 ifkp$="■"thenml=100:return
1899 rem f5
1900 ifkp$="■"thenml=150:return
1909 rem f7
1910 ifkp$="■"thenml=200:return
1920 goto1880
1929 rem clr
1930 poke53280,6:print"■           plumber's nightmare"
1939 rem crd
1940 print"■   you've never seen so many pipes!"
1949 rem crd
1950 print"■straight pipes,bent pipes all mixed up"
1960 print"together pipes!"
1969 rem crd
1970 print"■   all you have to do is sort them out!"
1979 rem crd
1980 print"■   well,not quite all,you also have to"
1990 print"join the tank at the top to the tap at"
2000 print"the bottom!"
2009 rem crd
2010 print"■   you only have a certain number of"
2020 print"moves available to move the pieces into"
2030 print"the blank space."
2039 rem crd
2040 print"■   you will be awarded 50 points for"
2050 print"each piece of pipe correctly connected"
2060 print"to the tank and a bonus of 1000 points"
2070 print"for each piece used if you connect up"
2080 print"to the tap."
2089 rem crd
2090 print"■   you may finish the game with key f7."
2099 rem rvs off-hom
2100 print"          ■ press any key to start ■■"
2110 poke198,0:wait198,1:poke198,0
2120 return
2130 fora=0to6:forb=0to2:poke1064+a+b*40,160:nextb,a:poke1181,32:poke1151,32
2140 poke1189,225:poke1190,97:foru=1184to1188:pokeu,32:next:poke1111,32
2150 u=1900:pokeu,32:pokeu+1,98:pokeu+2,98:pokeu+3,32:poke1071,32:poke1105,148
2160 pokeu+40,98:pokeu+41,254:pokeu+42,252:pokeu+43,123:poke1106,129
2170 pokeu+80,226:pokeu+81,251:pokeu+82,236:pokeu+83,97:poke1107,142
2180 pokeu+120,32:pokeu+121,32:pokeu+122,32:pokeu+123,126:poke1108,139
2190 poke2020,28:poke2021,1:poke2022,16
2200 return
2209 rem clr- 10*crd
2210 print"■■■■
```

64 PROGRAM

```
2270 ifkp$="n"thenpoke53280,14:poke53281,6:poke646,14:print"■":end
2280 goto2260
2290 gt=0:x=2:y=1:th=0
2300 fort=1to500:next:a=s%(x,y):q=0:s%(x,y)=0
2310 if(a=0ora=5ora=6ora=12)and((s%(x,y+1)and1)=1)theny1=y+1:x1=x:q=1:goto2350
2320 if(a=5ora=3ora=9)and((s%(x,y-1)and4)=4)theny1=y-1:x1=x:q=1:goto2350
2330 if(a=10ora=9ora=12)and((s%(x-1,y)and2)=2)thenx1=x-1:y1=y:q=1:goto2350
2340 if(a=10ora=3ora=6)and((s%(x+1,y)and8)=8)thenx1=x+1:y1=y:q=1
2350 ifx=9andy=6and(a=3ora=10)thenth=1:goto2370
2359 rem hom crl
2360 ifq=1thengt=gt+50:gosub1540:x=x1:y=y1:print"■core:";gt;"■        ":goto2300
2370 gosub1540
2379 rem hom- 17*crr
2380 ifth=1thenprint"■■■■■■■■■■■■■■■■■■■■■■■■bonus:";gt*20:gt=gt+(gt*20)
2385 fort=1to2000:next
2390 goto2210
2400 fora=1to56:j1%(a)=j%(a):next:return
2420 data32,32,32,32,32,32,32,32,32,32,32,32,32,32,32,32
2430 data79,225,97,80,101,225,252,98,101,124,226,226,76,111,111,122
2440 data79,225,97,80,101,225,97,103,101,225,97,103,76,225,97,122
2450 data79,119,119,80,101,108,98,98,101,225,236,226,76,225,97,122
2460 data79,225,97,80,98,254,97,103,226,226,126,103,76,111,111,122
2470 data79,119,118,80,98,98,98,98,226,226,226,226,76,111,111,122
2480 data79,119,119,80,98,98,123,103,226,251,97,103,76,225,97,122
2490 data10,10,10,10,10,10,10,10,10,10
2500 data5,5,5,5,5,5,5,5,5,5
2510 data9,9,9,9,9,9,9,9,9
2520 data3,3,3,3,3,3,3,3,3
2530 data6,6,6,6,6,6,6,6,6
2540 data12,12,12,12,12,12,12,12,12
```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Rainbow
TI-99/4A £3.20

Softi, 14 Station Rd, Brough, N Humberside HU15 1DY

This is an educational program described as being suitable for four to eight year olds, although I would find it hard to imagine that it would retain the interests of children over seven.

The computer draws a picture of a boy, girl and dog in a field Their clothing and other items in the field are assigned colours. After a description whilst the picture is drawn, questions are asked on what colour an article is.

If the answer input is correct, then a sweet is drawn in a box. When ten questions have been answered, the colours change and the questions are asked again. When 20 sweets fill the box, the game ends.

Although great care has been taken to redefine a complete character set so that questions and statements are written in lower case lettering, the answers need to be entered in upper case. This is because typing with the alpha lock off causes the stems of letters to be omitted, making orange appear as oranae

Also a problem on my TV was trying to distinguish the colours of smaller items. J.W.

instructions	55%
ease of use	60%
display	50%
value for money	70%

★-★

Clever Cloggs — History Mystery
48K Spectrum £7.95

Argus, No. 1 Golden Square, London W1R 3AB

The Clever Cloggs tapes are described as Early Learning Games. History Mystery is aimed at the five to 12 age group.

The two younger members of my family were recruited to assess this tape. From the hours they spent using it and the laughter, they gave it their approval. What is more, they learnt and remembered facts, so it served its purpose as well.

History Mystery will take you to Biblical times, and the lands of the Middle East. Clever Cloggs is the character you guide round these lands retrieving the treasures of the past. The game has five levels to allow the child to learn the techniques of playing and providing clues on where treasures can be found. Further clues are provided with references to the Bible

As the child's skill level increases, fun is brought in with robbers who are out to get the treasures. Excellently drawn maps of the Middle East, Israel and Jerusalem, plus amusing camel and whale rides complete a well produced game which will amuse and educate. An ideal combination! D.N.

instructions	70%
playability	90%
graphics	90%
value for money	80%

★-★-★-★

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Tiny Code Development System
48K Spectrum £5.50

Amazing Games, 39 Maple Dr, Burgess Hill, W Sussex, RH15 8EX

Tiny Code is for programmers with a knowledge of BASIC who wish to learn Z80 machine code, and is supplied with a manual explaining each Tiny Code command.

It is a simplified version of Z80 assembler, with the most difficult commands omitted. If an error is encountered in a program, an error message is displayed, unlike actual machine code where a mistake crashes the computer, obliterating the program. This useful error-trapping facility makes programs run slowly. They are much slower than BASIC, because this system is written in BASIC! This makes the inclusion of non-machine code instructions daft, because the only reason for using Tiny Code is to learn machine code, as Tiny Code programs are very slow and restricted

The program is slow to respond and the editing is poor. When programs are executed you have the option of a display of the registers and/or single stepping through the program.

Tiny Code is a cheap introduction to machine code, but it won't save you buying the introductory course, assembler and monitor which are essential if you are serious about learning. S.E.

instructions	80%
ease of use	30%
display	70%
value for money	50%

★-★

Games Creator
CBM 64 £12.95

Mirrorsoft, Holborn Circus, London EC1P 1DQ

Programs enabling computer owners to create their own masterpieces are becoming more common. This package enables you to create arcade games of the maze or scrolling type.

The program loads using the ubiquitous Turboload and on running presents you with a menu. There are editors enabling you to define sprites, scenery, music and sound effects. The sprite and music editor are good enough to warrant release in their own right. Once you've designed the protagonists, there are options for defining the rules of movement, collisions, speed of animation and movement and other parameters.

The games you can write are limited. You can only have one screen and there can only be up to five aliens on screen at once In spite of these limitations, the three demonstration games are playable. I see the market for this package as the younger owners of 64s who want to write good games without learning machine code. Real games fanatics may prefer an alternative programming language.

This program won't turn you into Jeff Minter but it's great fun to use and well worth a close look. A.W.

instructions	75%
ease of use	85%
display	75%
value for money	75%

★-★-★-★

Finance Manager
48K Spectrum £19.95

Oxford Computer Publishing, P.O. Box 99, Oxford

Although this program is aimed at both business and household accounts, it has been my experience that most household accounts can be entered in a small note book, in my case a very small note book.

The odd thing is that it is the householder that is most likely to have a Spectrum. If you happen to be a business person, and a householder with a Spectrum, then this program might be just the thing for you. Especially if you run a small business, or are self-employed.

The package comes complete with comprehensive instructions by way of a booklet, which, unless you are a financial wizard, you will have to study carefully All cash entries are a single entry, either plus or minus, and the program automatically converts to double entry.

The program is very user friendly, and maintaining multiple accounts is easy with the SAVE and LOAD options. In fact, given a reasonable knowledge of acounting, this program, a Spectrum, and a decent printer, this could be the basis of a good business for some enterprising person

In my opinion value for money, and could pay for itself in certain circumstances B.B.

instructions	100%
ease of use	95%
display	100%
value for money	100%

★-★-★-★-★

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R&R SOFTWARE

R&R Software Ltd 5 Russell Street Gloucester GL1 1NE
Tel (0452) 502819

Redefine your characters

This utility by Chris Southall gives you a total of 116 user defined graphics. You can also run it on a 16K Spectrum — see the hints on conversion

This program is basically a character generator, but has the advantage that it will redefine the whole character set and not just the 21 user defined graphics, giving a total of 116 UDGs.

The program works by holding the data for the graphics in high memory and altering the system variable CHARS to point to the new character set. It also has the added advantage that the graphics produced by it are recognised by SCREENS, meaning that the games programmer doesn't have to play around with the complex commands such as ATTR and point

How it works

11-15 POKE Sinclair Set into high memory
17-41 instructions
43-45 get character to be defined
47-71 screen set up
73-93 reads keyboard
81 saves new character set
113-145 POKEs character set into memory
147-163 prints new character set onto screen
165-175 resets character set
177-205 edit a character

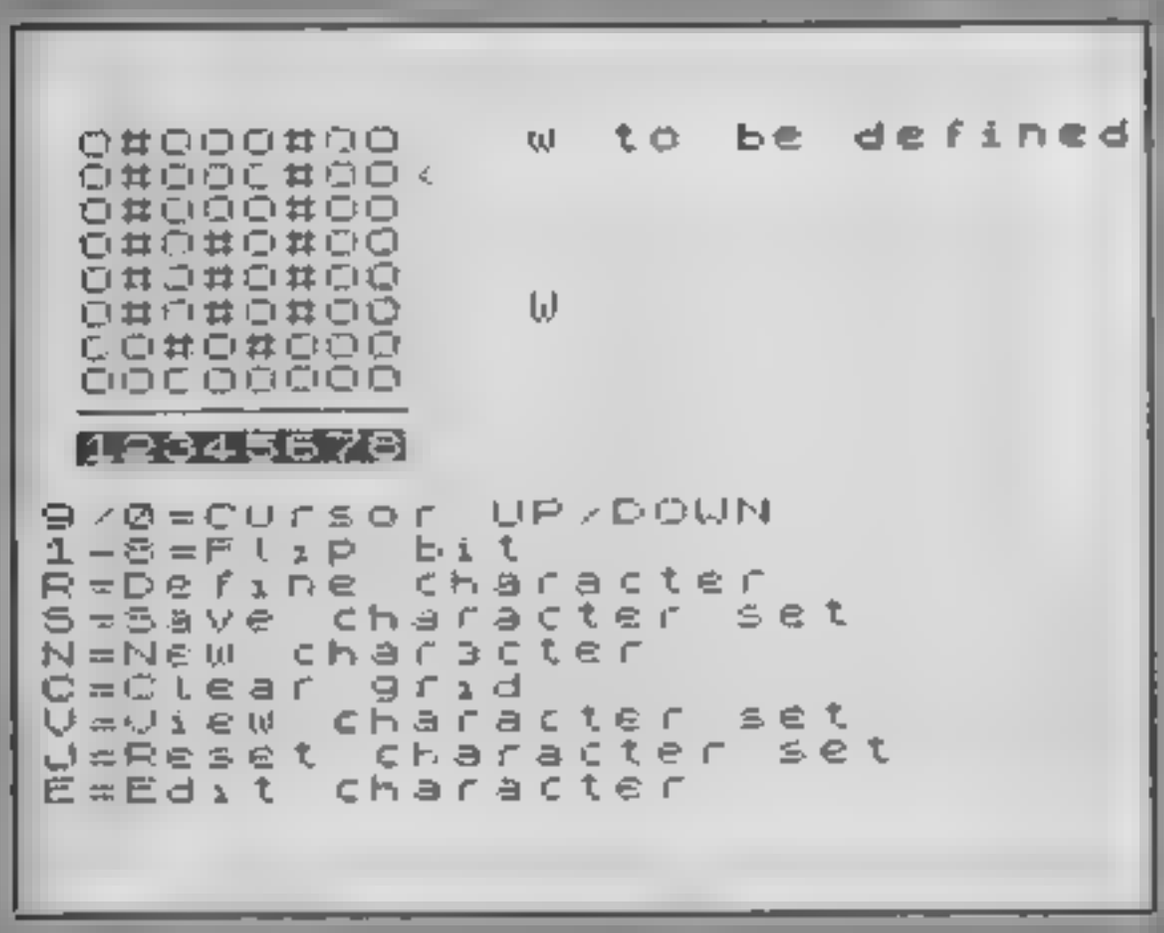
Variables

d code of key pressed
d$ character to be defined
p y coordinates of "X" cursor
n,a$,k$,u,k,g$ temporary variables

Hints on conversion

This program is hard to convert as most other micros store their characters using a different system. The program as listed will only run on the 48K Spectrum —

Change 51200s in lines 13, 81, 127, 171 to 30720
Change 200s in lines 41, 131, 147, 187 to 120



Screen dump

Listing

```
  1 BORDER 0
  3 INK 7
  5 PAPER 0
  7 CLS
  9 PRINT #0; FLASH 1;"
    PLEASE WAIT              "
 11 FOR n=0 TO 255*8
 13 POKE (51200+n),PEEK (15360
+n)
 15 NEXT n
 17 CLS
 19 LET a$="CHARACTER GENERATO
R"
 21 FOR n=LEN a$ TO 1 STEP -1
 23 FOR 1=0 TO n
 25 LET b$=" "+a$(n)
 27 PRINT AT 1,(1+3); INK 5;b$
 29 NEXT 1
 31 NEXT n
 33 PRINT AT 3,6; BRIGHT 1;
C Southall 1983"
 35 PRINT AT 5,0; INK 6;"This
program is a character gen-erat
or which allows you to rede-fin
e the whole character set.   (n
ot just graphic characters
      from a-u)"
 37 PRINT
 39 PRINT
 41 PRINT  INK 6;"Once the cod
e has been saved on tape,to use
 it just load it backinto the c
omputer and type in   as a dire
ct command.....
POKE 23607,200"
 43 INPUT "character to be red
efined:-"; LINE d$
 45 IF CODE d$<33 OR CODE d$>1
27 THEN  GO TO 43
 47 CLS
 49 PRINT AT 0,12;d$;" to be d
efined"
 51 FOR n=0 TO 7
 53 PRINT AT n,1; INK 2;"OOOOO
OOO"
 55 NEXT n
 57 PRINT AT 13,0;"R=Define ch
aracter";AT 14,0;"S=Save charac
```

```
ter set"
  59 PRINT AT 15,0;"N=New chara
cter";AT 16,0;"C=Clear grid";AT
 11,0;"9/0=Cursor UP/DOWN";AT 1
2,0;"1-8=Flip bit";AT 17,0;"V=V
iew character set";AT 18,0;"J=R
eset character set"
  61 PRINT AT 19,0;"E=Edit char
acter"
  63 PLOT 8,108
  65 DRAW 8*8,0
  67 PRINT AT 9,1; INVERSE 1;"1
2345678"
  69 LET p=0
  71 PRINT AT p,9;"<"
  73 LET s$=INKEY$
  75 IF s$="0" OR s$="9" THEN
GO SUB 105
  77 IF INKEY$="v" OR INKEY$="V
" THEN  GO SUB 147
  79 IF INKEY$="C" OR INKEY$="c
" THEN  PRINT AT p,9;" ": GO TO
 49
  81 IF INKEY$="s" OR INKEY$="S
" THEN  SAVE "CHR$"CODE 51200,2
55*8: PRINT #0;"REWIND TAPE FOR
 VERIFICATION": VERIFY ""CODE :
 CLS : GO TO 49
  83 IF INKEY$="j" OR INKEY$="J
" THEN  GO SUB 165
  85 IF INKEY$="r" OR INKEY$="R
" THEN  GO TO 113
  87 IF INKEY$="n" OR INKEY$="N
" THEN  GO TO 43
  89 IF INKEY$="e" OR INKEY$="E
" THEN  GO SUB 177
  91 LET d=CODE INKEY$
  93 IF d-48<1 OR d-48>8 THEN
GO TO 71
  95 IF SCREEN$ (p,d-48)="0" TH
EN  PRINT AT p,d-48; INK 6;"#":
 BEEP .3,10: BEEP .1,3: GO TO 7
1
  97 PRINT AT p,d-48; INK 2;"0"
  99 BEEP .3,10
 101 BEEP .1,3
 103 GO TO 71
 105 PRINT AT p,9;" "
 107 LET p=p+(INKEY$="0" AND p<
7)-(INKEY$="9" AND p>0)
 109 BEEP .2,2
 111 RETURN
 113 FOR n=0 TO 7
 115 LET u=0
 117 LET k=1
 119 FOR j=8 TO 1 STEP -1
 121 IF SCREEN$ (n,j)="#" THEN
 LET u=u+k
 123 LET k=k+k
 125 NEXT j
 127 POKE (51200+CODE d$*8)+n,u
 129 NEXT n
 131 POKE 23607,200
 133 PRINT AT 5,12;d$
 135 FOR k=1 TO 200
 137 NEXT k
 139 POKE 23607,60
 141 PRINT AT 5,12;" "
 143 PRINT AT p,9;" "
 145 GO TO 43
 147 POKE 23607,200
 149 CLS
 151 FOR k=32 TO 127
 153 PRINT CHR$ k;
 155 NEXT k
 157 POKE 23607,60
 159 PAUSE 0
 161 CLS
 163 GO TO 49
 165 INPUT "ARE YOU SURE? (Y/N)
 "; LINE g$
 167 IF g$="n" OR g$="N" THEN
GO TO 49
 169 FOR n=0 TO 255*8
 171 POKE 51200+n,PEEK (15360+n
)
 173 NEXT n
 175 GO TO 43
 177 INPUT "CHARACTER TO BE EDI
TED "; LINE s$
 179 IF LEN s$>1 THEN  GO TO 17
7
 181 FOR n=0 TO 7
 183 PRINT AT n,1; INK 2;"00000
000"
 185 NEXT n
 187 POKE 23607,200
 189 PRINT AT 21,0;s$
 191 FOR n=0 TO 7
 193 FOR g=0 TO 7
 195 IF POINT (g,n)=1 THEN  PRI
NT AT (7-n),g+1; INK 6;"#"
 197 NEXT g
 199 NEXT n
 201 POKE 23607,60
 203 PRINT AT 21,0;" "
 205 RETURN
 207 REM Character Generator
          C Southall 1983
 209 SAVE "CHAR GEN" LINE 1
 211 BEEP 1,10
 213 CLS
 215 PRINT #0;"REWIND TAPE FOR
VERIFICATION"
 217 VERIFY ""
 219 BEEP1,10
 221 CLS
 223 GO TO 19
```

Peter Pan meets Robin Hood

You can now take the part of one of these famous heroes. Our reviewers have picked out the best

[illegible]
[illegible] Spectrum
£9.95

Hodder and Stoughton, 47 Bedford Sq, London WC1B 3DP

The arrival of a game called Peter Pan caused some excitement in my house. What could be a better game than a story that has enthralled youngsters for generations?

The packaging is impressive. The case has a bright picture of Peter Pan and Captain Hook on the front. Inside, alongside the cassette, is a copy of the story in paperback. If you are not familiar with the story, you are advised to read the book before playing.

The promise is maintained as you load the game. Another well-drawn scene is displayed as the long program feeds into RAM. However, once the game gets underway, any illusion about it being special is dispelled. It is an ordinary text adventure, with simple scenes at the top of the screen to depict the location of the point reached in the adventure. Some real-time prompts have been added when some urgency is required in making a decision.

Still, if you are an adventure game freak, then the classic battle between Peter Pan and Captain Hook should enthral you. D.N.

instructions	60%
playability	60%
graphics	40%
value for money	80%

★★★

[illegible]
[illegible]
£9.95

MRM, 17 Cross Coates Rd, Grimsby DN34 4QH

I watch each new release from this company very carefully, for most of their games are chart toppers and sold at a very reasonable price.

In this game you are changed into Bertie Bear and go around the screen collecting gems.

There are the usual numbers of chasers of all types: trees, gremlins, gem gobblers, ghosts and witches. The difference from a normal walk around game is in the backgrounds. They are a maze of passages but represented in a three dimensional manner.

There are lifts, that only you can use, to the higher levels. There are magic hats to make you invincible for a short period and you can attack the gobblers when they are eating a gem.

The interesting graphics are one of the distinctive features of this program. Plenty of colour, speed and sound effects give a well polished feel to the whole thing. The final feature of note is the inclusion of nine screens in each of the programs and as there are two of these that means you have 18 to complete in all. D.C.

instructions	95%
playability	95%
graphics	95%
value for money	100%

★★★★★

Kentilla
48K Spectrum
£6.95

Micromega, 230-236 Lavender Hill, London SW11 1EE

Kentilla is a graphically illustrated adventure, written by Derek Brewster. This is written in very slick machine-code, with a sophisticated input interpreter, which allows not only good sized sentences, questions and speech, but also the facility to look into a new location *before* you get there.

The illustrations are rather small but stylish and swiftly drawn, and the text presentation clear and colourful.

Whether you find it addictive or not depends on your taste in plots. This one has you cast in the role of the potential saviour of the universe boldly going in Carnland to seek the demonic being Graka who has within his grasp the Moonstone of Algrath.

Carrying, if you can find it, Kentilla, the sword of the mighty warrior Ashka, you'll soon be assailed by creatures whose names are so long and obscure, that by the time you have deciphered them and tried to say hello to them, they've attacked you at least, and quite possibly killed you.

Very nicely executed, but prefaced with Micromega's new anti-pirate loader which appears to be rather slow. D.M

[illegible]	10[illegible]%
playability	100%
graphics	90%
value for money	85%

★★★★

[illegible]
[illegible]

Stainless Software, 10 Alstone Rd, Stockport, Cheshire SK4 5AH

This program comes in two parts. The first program loads the graphic character definitions, and loads and runs the second. If you have a disc system you must use CALL FILES (1) before program one, otherwise program two won't load.

The textual character set is unusual but readable, and offered continuous background music, using a recently-discovered programming technique. I preferred the silent option. The game may be played using either joysticks or the keyboard, but not both.

Robin Hood is pitted against a variety of objects. The first is an archery target and subsequent mobile objects. They include the Sheriff's men, deer, and a falling apple.

The game is demanding, requiring you to visualise the trajectory of the arrow, taking into account wind speed and direction (indicated by clouds) and the bowstring tension which depends upon the length of time that the 'fire' key is held down.

I found it a difficult and frustrating game. Ten misses, each losing you five points, result in Robin's untimely demise. Unlike the original, this one has three lives, and you'll need them.

This program needs 32K and Extended BASIC. P.B.

instructions	75%
playability	45%
graphics	50%
value for money	80%

★★★

The Crystal Frog
48K Spectrum
£5.95

Kemsan, 29 Gisburn Rd, Hessle, Hull HU13 9HZ

A simple, one line, black and white loading screen leads to the instructions of this non-graphic adventure game that uses the standard size Sinclair character set.

You use the computer as eyes and ears in your quest of the Crystal Frog and return to the start in a small clearing in a field. Lengthy, poetic descriptions appear for each location — to score 100% you will have to visit all the locations and use certain objects. These will be found as you follow paths through the countryside, a castle and tunnels.

Seven words are given on the insert and you must discover the vocabulary as you travel. Any time the computer expects a command, you can SAVE the game to be played later — should you so wish.

After 39 turns I was being attacked in a tunnel and sustained a cleaver to the head. I was never more relieved to die than at this point — even though I had scored 0%.

Objects did not appear easily. Where are they are what are they? A slightly boring, non-addictive game. T.W.

instructions	50%
playability	40%
graphics	N/A
value for money	40%

★★

VIC-20 PROGRAM

The aliens are coming

The freedom of the galaxy is at stake and you, the pilot of a lone spaceship, must do battle with the dreaded alien invaders. There's plenty of action and no time to think in this game

by Marcel Melito

If you like zapping aliens then you'll love this game. The aliens are coming and only you can stop them.

Far above the planet earth in the hostile infinity of space your tiny ship battles against the hordes of alien invaders emerging from their mothership and hurtling toward you intent on destruction. You have only one laser against their vast armoury of weapons and only three lives before your ultimate end. The game requires fast reactions and great skill. As time goes by the numbers of your adversaries increase and the fight becomes more bitter.

The keys that you will need are Z which moves you left, C right, and, most important, M which fires your laser.

Variables

S score
L lives
G ground
B(2) bombs
X Y position of bomb
S(4) warships' locations
T P,DI warships

How it works

100-140 initialisation
150-250 print spaceship and score
260-290 does warship exist?
300 moves warship
320 any command?
340-360 move ground base
370 fire missile
380-440 missile destroys bomb or warship
450-480 update score
540-780 move warship, create new warship
730-750 issue bombs
760 destroys ground base
800-860 print fire
870 if end of game
880 wait, start again

```
4 REM SPACE FIGHT
5 PRINT"[CLR]"
7 REM[ROM][RED]
8 PRINT"     [RVS]ASTRO WARS"
9 PRINT
10 PRINT"     INSTRUCTIONS"
20 PRINT"     ____________"
30 PRINT"THE U.F.O IS SENDING  OUT INVADERS  WITH A  DEADLY MISSION,TO KILLYOU.
32 PRINT"YOU MUST DEFEAT THEM  BEFORE THEY DEFEAT YOU"
33 PRINT"OBJECT OF GAME IS TO  SEE HOW LONG YOU CAN  LAST."
52 PRINT"       [RVS]CONTROLS"
53 PRINT"       Z=LEFT"
54 PRINT"       C=RIGHT"
55 PRINT"       M=FIRE"
56 PRINT"       [RVS]GOOD LUCK"
57 PRINT"    [RVS]PRESS ANY KEY"
58 GETA$:IFA$=""THEN58
61 GETA$:IFA$=""THEN61
100 POKE36879,8:CO=30720:LI=3
110 DIMS(4),B(2):DI=99:UP=99
120 DEFFNY(DI)=INT((S(DI)-7680)/22)
130 DEFFNX(DI)=S(DI)-(Y*22+7680)
140 G=8174:S=0
149 REM[CLR][CRD6][GRN][RON][CRR][GRN][ROF]
150 PRINT"[HOM][CRD6]"TAB(7)"[SHIFT-*] [SHIFT-*] /"
159 REM[RED][RON][ROF][RON][CRR][ROF][RON]
160 PRINTTAB(4)"[SHIFT-*]  [SHIFT-*]  [SHIFT-*]"
169 REM[YEL][RON][CRR][ROF][RON]
170 PRINT"  [SHIFT-*] O O O [SHIFT-*] O O O [SHIFT-*]"
179 REM[YEL][RON][ROF]
180 PRINT"[SHIFT-*]  [SHIFT-*]"
189 REM[GRN][RON][WHT][ROF][GRN][RON]
190 PRINTTAB(3)"[SHIFT-*]  [SHIFT-*]  [SHIFT-*]"
199 REM[RON][BLU][ROF][GRN][BLU][RON]
200 PRINTTAB(4)"[SHIFT-*]///[SHIFT-*][SHIFT-*]\\\[SHIFT-*]"
209 REM[CYN][RON][ROF]
```

```
210 PRINTTAB(5)"■■■ . . . . ■■"
220 PRINTTAB(7)"■■■■■■■■■■■■■"
229 REM[HME][WHT]
230 PRINT"■■SCORE"TAB(11)"LIVES"
240 POKEG-1+CO,1 POKEG-1,112 POKEG+CO,1 POKEG,113 POKEG+1+CO,1 POKEG+1,110
250 PRINT"■■■■■■■"S,TAB(16)LI
260 FORI=0TO4:IFI=DIORI=UPORS(I)=0THEN310
270 D=INT(RND(1)*3-1)+INT(RND(1)*3-1)*22
280 IFS(I)+D<7724ORS(I)+D>7811THEND=0
290 IFPEEK(S(I)+D)<>32THEND=0:GOTO310
300 POKES(I),32 S(I)=S(I)+D:POKES(I)+CO,3:POKES(I),88
310 IFPEEK(G-1)<>112ORPEEK(G)<>113ORPEEK(G+1)<>110THEN800
320 K=PEEK(197):IFK=64THEN540
330 IFK=36THEN370
340 POKEG-1,32 POKEG+1,32 G=G-(K=33)*(G>8165)+(K=34)*(G<8184)
350 POKEG-1+CO,1:POKEG+CO,1:POKEG+1+CO,1
360 POKEG-1,112:POKEG,113:POKEG+1,110 GOTO540
370 POKE36878,9 FORJ=250TO210STEP-8 POKE36877,J NEXT J=G-22
380 P=PEEK(J) IFP<>32ANDP<>88ANDP<>46THENJ=J+22 GOTO500
390 POKEJ+CO,7 POKEJ,93 IFP=32THEN510
400 POKEJ+CO,2:POKEJ,42
410 POKE36878,15 POKE36877,130
420 IFDI=99THEN460
430 IFS(DI)<>JTHEN460
440 POKE36876,0
450 S(DI)=0:S=S+20:DI=99 POKEJ,P1:POKEJ+CO,C1:J=J+22
460 FORI1=0TO4 IFS(I1)=JTHENS=S+10 S(I1)=0
470 NEXT
480 FORI1=0TO2 IFB(I1)=JTHENB(I1)=0 S=S+5
490 NEXT:POKE36877,210
500 GOTO530
510 J=J-22:IFJ>7679THEN380
520 J=J+22
530 POKE36877,0 FORI1=G-22TOJSTEP-22 POKEI1,32 NEXT
540 IFUP<99THEN570
550 UP=INT(RND(1)*5) IFS(UP)>0ORRND(1)<.7THENUP=99 GOTO590
560 S(UP)=7910
570 IFS(UP)<7724ORS(UP)<7763ANDRND(1)>.4THENUP=99 GOTO590
580 POKES(UP),32 S(UP)=S(UP)-22 POKES(UP)+CO,5 POKES(UP),88
590 IFDI<99THEN620
600 DI=INT(RND(1)*5) IFDI=UPORS(DI)=0ORRND(1)<.8THENDI=99 GOTO630
610 P1=32:C1=0
620 Y=FNY(DI):X=FNX(DI):D=22
630 POKE36878,12:POKE36876,(25-Y/6)*10
640 IFX>=10ANDY<7ORX<15ANDY>15THEND=D+1:GOTO660
650 IFX<10ANDY<10ORX>=10ANDY>5ANDY<15THEND=D-1
660 POKES(DI)+CO,C1:POKES(DI),P1
670 S(DI)=S(DI)+D IFS(DI)>8185THENS(DI)=0 DI=99 POKE36876,0 GOTO690
680 P1=PEEK(S(DI)) C1=PEEK(S(DI)+CO) POKES(DI)+CO,4 POKES(DI),88
690 FORJ=0TO2:IFB(J)>0THEN740
700 IFDI=99ORRND(1)<.7THEN730
710 IFPEEK(G-1)<>112ORPEEK(G)<>113ORPEEK(G+1)<>110THEN800
720 IFS(DI)<7980THEN790
730 B(J)=S(DI)+22
740 POKEB(J),32 B(J)=B(J)+22 IFB(J)>8185THENB(J)=0 GOTO790
750 IFPEEK(B(J))=32THEN780
760 IFABS(B(J)-G)<2THEN800
770 B(J)=0 GOTO790
780 POKEB(J)+CO,1:POKEB(J),46
790 NEXTJ,I:GOTO250
800 POKEG-1+CO,2 POKEG+CO,2 POKEG+1+CO,2 POKE36876,0 POKE36877,140
810 FORI=1TO25:POKEG-1,223:POKEG,223 POKEG+1,223
820 POKE36878,15-(I/1.7):FORJ=1TO50:NEXT
830 POKEG-1,233 POKEG,233:POKEG+1,233
840 FORJ=1TO50:NEXTJ,I
850 FORI=0TO2:IFB(I)>0THENPOKEB(I),32
870 LI=LI-1:IFLI>0THEN240
880 FORI=1TO5000:NEXT:RUN
```

THE 6809 COLOUR SHOW

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Computer Marketplace (Exhibitions) Ltd. Part of the Rushworth Dales Group, 20 Orange Street, London WC2H 7ED.

HOW TO GET THERE

The Royal Horticultural Halls are just off Victoria Street a few minutes walk from Victoria or Parliament Square.

Buses 11, 24, 29, 70, 76 and 88 run up Victoria Street.

Mainline stations; Waterloo, Charing Cross and Victoria.

Underground stations; St. James park (District and Circle lines), Victoria (District, Circle and Victoria lines).

There is an NCP car park in Abingdon Street, a few minutes away.

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Please rush me ____ (qty) adult tickets at £2 each and ____ (qty) tickets for under sixteen year olds at £1 each for the 6809 colour show. I enclose cheque to the value of £_____

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6809 is the registered name of Motorola Ltd.

You'll need to think hard and carefully as this Simon-type game gets progressively more difficult. By HCW regular, Steve Lucas

In this game, the computer displays a random sequence of coloured blocks in the four corners of the screen. You must try to repeat the sequence using the keys:—

8	9
c	b

Each time you correctly repeat the sequence, it gets longer! To make the game more difficult, there is a time limit, which is selected at the beginning (1 = easy, 2 = hard)

Note: please remember to check your spacing when typing in Amstrad listings. Make sure you leave a space between the command DATA and the first datum on the line.

Hints on conversion

1 lower$(x$) converts upper to lower case
2 you will need to change all WHILE WEND loops to either REPEAT UNTIL loops (remembering that the condition for terminating the loop is at the start of the loop in the WHILE WEND loop, but at the end with a REPEAT UNTIL loop) or a conditional GOTO
3 the graphics blocks are built up as a string of CHR$(143) You can use any character you like
4 replace sound commands as appropriate
5 LOCATE sets the text cursor at X,Y coordinates use print tab(x,y) or print at x,) as appropriate
6 PEN selects colour used, PAPER selects background colour, INK selects colours of PEN from the multicoloured palette

How it works

30 starts random number generator at random position (dependent on time)
40-60 messages
70 multicolour mode
80 create block as a string of characters
90 select colours used
100 call instructions
110-170 select difficulty
190-260 main control WHILE WEND loop
250 increment score
260-300 end of game
310-400 select random sequence
410-520 display sequence
530-650 your turn
660-940 display graphics in correct positions
950-1060 instructions

Variables

sc score
m$(x) messages
a random sequence
a$ your sequence
b$ sequence of blocks held as string
x check condition for loops
tl time check
X% difficulty
c$ mid$ of b$
xx,xy check position in string

Exercise your memory

```
10 REM ** FLASH **
20 REM ** by Steve Lucas  July 1984 **
30 RANDOMIZE TIME
40 DIM a$(6)
50 DIM m$(6): FOR x=1 TO 6: READ m$(x): NEXT
60 DATA "Watch","Now Repeat","Correct","Wrong !","The C
orrect Sequence Was :-","Too Slow"
70 MODE 0
80 hh$= STRING$(6,CHR$(143))
90 INK 0,0: INK 1,2: INK 2,18: INK 3,24: INK 4,6: INK 5
,10: INK 6,4: INK 7,26
100 GOSUB 960
110 PAPER 0:BORDER 26: PEN 7
120 LOCATE 5,10: PRINT" Press"
130 PEN 3
140 LOCATE 8,17: PRINT"1.   Easy"
150 LOCATE 8,19: PRINT"2.   Hard"
160 z$=INKEY$: IF z$="" THEN 160
170 IF z$="1" THEN xX=40 ELSE IF z$="2" THEN xX=20 ELSE
 160
180 ac=0:sc=0:b$="": REM ** b$ holds sequence
190 WHILE ac=0
200 GOSUB 320: REM ** add letter to sequence
210 GOSUB 420: REM ** subroutine to display the sequenc
e
220 GOSUB 530: REM ** try to repeat sequence **
230 IF ti>=nX*4 THEN CLS: LOCATE 5,10:PEN 3: PRINT m$(6
): ac=1: GOTO 270
240 IF aa$<>MID$(b$,zx,1) THEN CLS:PEN 7: LOCATE 5,10:P
RINT m$(4): ac=1: GOTO 270
250 sc=sc+1
260 WEND
270 PEN 6: LOCATE 2,10: PRINT"You Scored :-";sc: PEN 7:
LOCATE 1,21:PRINT"Press <Space Bar>  for new game ."
280 aa$=INKEY$: IF aa$<>" " THEN 280
290 RUN
300 END
310 REM ** subroutine to select a random letter and add
 it to b$ **
320 a=INT(RND(1)*4)+1
330 IF a=1 THEN a$="r"
340 IF a=2 THEN a$="y"
350 IF a=3 THEN a$="c"
360 IF a=4 THEN a$="b"
370 IF a=0 THEN PRINT"Program has crashed !": END
380 a$=LOWER$(a$)
390 LET b$=b$+a$
400 RETURN
410 REM ** display the sequence **
420 CLS: LOCATE 7,10:PEN 7: PRINT m$(1)
430 FOR x=1 TO 1000: NEXT x: REM ** time delay to suit
**
440 CLS
450 LET xy=LEN(b$): xx=0
460 WHILE xx<xy
470 c$=MID$(b$,xx+1,1)
480 IF c$="r" THEN s=1 ELSE IF c$="y" THEN s=2 ELSE IF
c$="c" THEN s=3 ELSE s=4
490 IF s=1 THEN GOSUB 670 ELSE IF s=2 THEN GOSUB 740 EL
SE IF s=3 THEN GOSUB 810 ELSE GOSUB 880
500 xx=xx+1
510 WEND
520 RETURN
530 CLS:LOCATE 5,10:PEN 7:PRINT m$(2)
540 FOR x=1 TO 1000: NEXT: REM ** time delay to suit
550 ti=0:CLS:zx=0
560 WHILE zx<>LEN(b$) AND ti<nX*4
570 ti=ti+1
580 aa$=INKEY$
590 aa$=LOWER$(aa$)
600 IF aa$<>"r" AND aa$<>"y" AND aa$<>"c" AND aa$<>"b"
THEN 640
610 zx=zx+1
620 IF aa$="r" THEN GOSUB 670 ELSE IF aa$="y" THEN GOSU
B 740 ELSE IF aa$="c" THEN GOSUB 810 ELSE IF aa$="b" TH
EN 880 ELSE 640
630 IF MID$(b$,zx,1)<>aa$ THEN 690
640 WEND
650 RETURN
660 REM ** draw graphic blocks **
670 PEN 1:CLS
680 FOR x=1 TO 6
690 LOCATE 2,x+2
700 PRINT hh$
710 NEXT
720 SOUND 1,478,40
730 RETURN
740 PEN 2:CLS
750 FOR x= 1 TO 6
760 LOCATE 12,x+2
770 PRINT hh$
780 NEXT
790 SOUND 1,239,40
800 RETURN
810 PEN 3:CLS
820 FOR x=1 TO 6
830 LOCATE 2,X+12
840 PRINT hh$
850 NEXT
860 SOUND 1,119,40
870 RETURN
880 PEN 4 : CLS
890 FOR x=1 TO 6
900 LOCATE 12,x+12
910 PRINT hh$
920 NEXT
930 SOUND 1,60,40
940 RETURN
950 REM ** instructions **
960 CLS:MODE 1: LOCATE 15,2: PEN 2: PRINT "F 1 a s h"
970 PRINT:PRINT:PRINT"     (C) Steve M. Lucas July 1984
"
980 PEN 3:PRINT:PRINT:PRINT"    This is a game of memor
y."
990 PRINT"Watch the screen while coloured squares flash
 in a random sequence."
1000 PRINT:PRINT"You must try to repeat the sequence us
ing the keys :-"
1010 PRINT:PRINT:PRINT"                  r   y"
1020 PRINT:PRINT:PRINT"                  c   b"
1030 PRINT:PRINT:PRINT:PEN 1: PRINT"   Press the <Space
 Bar> to start game"
1040 aa$=INKEY$:IF aa$<>" " THEN 1040
1050 MODE 0
1060 RETURN
```

Battlezone
48K Spectrum
£6.95

Quicksilva, P.O. Box 6, Wimborne, Dorset BH21 7PY

Once the game had loaded I found the display of the QS initials, and the title, very entertaining, unfortunately the game wasn't. You are in charge of a tank, with track controls left forward/reverse, right forward/reverse and fire button

In front of you is a view representing mountains, a simulation of a RADAR PPI display, and messages informing you of the enemy's position.

The enemy consists of line drawn tanks, and some flying objects which I couldn't identify. Although the 'tank' responded to the track controls I just didn't get the feel of being in a tank

For example, when the enemy was supposed to be behind me I used forward right only, which, I reasoned, would sooner, or later, turn me completely round, not so, the enemy was still behind me

Again, using both left and right forward controls together should have moved me nearer the horizon, I did not move Another thing I found was too long a delay between shots. Not one of my favourite games. **B.B.**

instructions	100%
playability	60%
graphics	80%
value for money	75%

★-★-★

Motorcycle Crazy
48K Spectrum
£5.95

Kerian, 29 Gisburn Rd, Hessle, Hull HU13 9HZ

You zoom past the B.S.A. factory, Selly Oak and Don Law's Scrapyard to Donnington race track as you search for the Award, so you can return it to Ariel Castle. This is an amusing graphic adventure game that sits you on a motorbike, which runs out of petrol and develops a flat tyre. As you journey past the beer tent and a.ong a motorway you can collect four of these items: Yale key, large key, rusty key, sandwich, waterproof suit, spanner, toolkit, petrol and puncture outfit

Each location is simply and colourfully drawn and briefly described in words. You are told seven words understood by the program and have to find out if there are any others. You have to visit each location in order to score 100% and use certain items as you proceed.

Keep away from the Army Firing Range or you'll end up in detention. Steer clear of the quarry or you'll have an accident

I scored 15% in 49 turns and could SAVE a played game Although not up to present standards, Motorcycle Crazy' is quite addictive and enjoyable **T.W.**

instructions	50%
playability	70%
graphics	50%
value for money	50%

★-★-★

Millionaire
32K Electron
£6.50

Incentive, 54 London St. Reading RG1 4SQ

Have you ever dreamed of becoming a millionaire? Here is your chance to become a millionaire over and over again

In this game you start off as a software house with one program on the market and a rundown warehouse as your headquarters. The building changes to reflect your prosperity. You are asked to allocate 20 points to various aspects of a good program. The way in which the points have been distributed will govern how well you do. If your first choice does not result in good sales, you are given another opportunity. There is also a news bulletin which comments on your performances. There is also a graph which displays the level of your sales. You might have to skate on thin ice and use dubious methods to boost your sales at times. To help you is a chap called Honest Harry He always has something guaranteed to increase your sales, but listening to him can land you in court. So it is wise not to reply too much on Harry.

What I particularly like about this game is that Incentive have redefined the text, this gives the program a touch of quality A facility to save the game position would have really made it great **M.B**

instructions	90%
playability	90%
graphics	N/A
value for money	90%

★-★-★-★-★

Action-packed package

If you try these games you could be a soldier, a millionaire — or both!

Zombie Zombie
48K Spectrum
£6.95

Quicksilva, P.O. Box 6, Wimborne, Dorset BH21 7PY

The first thing I do when reviewing any game is to read the inlay card. Hopefully this will give an insight into the game, and perhaps give me a feel for it

Having chosen the keyboard as my method of control, I found myself as a figure near a helicopter. The movement of the figure on the screen didn't quite match the up/down, left/right messages from the keyboard. Eventually I managed to get into the helicopter and fly off over the landscape.

Every now and then I glimpsed something among the buildings (ruins?). When I landed an indeterminate figure approached me, sometimes I won the battle, sometimes I lost. All the moveable graphics are small, and were jerky in their movements

After seeing many games with superb graphics animation, I got the impression that this was a small childs' version. **B.B**

instructions	100%
playability	50%
graphics	50%
value for money	50%

★-★

Spaceman Sid
BBC Model B
£7.95

English Software, Box 43, Manchester M60 3AD

If I use my daughter's interest in this program as an indicator I must give the game full marks.

Spaceman Sid drives a moon buggy across a planet surface looking for Dilithium Crystal mines which have been captured by alien forces. His route is pockmarked with craters and gullies which have to be jumped over, piles of rocks and scout ships, and there are hostile, bomb-dropping spaceships which have to be destroyed.

There are other dangers such as sliding bridges and meteors but I did not have sufficient skill to reach the point where these horrors appeared

The graphics are excellent. The wheels of the moon buggy follow the contours of the planet surface very realistically, and the screen layout is attractive with good use of colour and screen scrolling. The control keys are kept to a minimum and the aims of the game are easily understood The game is not easily mastered and it will, at first, seem impossible to make some of the jumps, but th surely gives value for money. You soon loose interest in an easily mastered game. **J.H.D.**

instructions	60%
playability	95%
graphics	95%
value for money	90%

★-★-★-★-★

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Linkword, 41 Walter Road, Swansea.

Get organized!

Tired of searching through magazines for a program you know you've seen before? P. Pantziarka's program helps you catalogue your library and put order in your life

As soon as you get a micro you find that your home starts to overflow with magazines and books. And of course sooner or later you'll want that little routine to turn your latest program into the block-buster it deserves to be, but where's the routine? It could be in any one of dozens of magazines.

This program is a simple, quick and easy to use index to help you keep track of what's where. There are of course several commercial programs available for a variety of uses and various levels of sophistication. This program is written specifically with cataloguing magazines in mind, although a few line changes could change that.

Variables

- **SS,TS,MS** subject array, title array and magazine array
- **QS** query string when searching index
- **NS** input string used in sub-routines
- **I** index counter used in data entry sub-routine
- **X** index counter used in search sub-routine
- **T** maximum value of I and number of items DIMensioned
- **N** input from menu, also used in sub-routines

The program is auto-RUN to save the data, so if you want to examine or change the listing remember not to use RUN or you'll CLEAR the data. Use GOTO 60 instead to restart the program

Hints on conversion

This program should convert easily. The size of the arrays DIMensioned can easily be increased by increasing the value of T. The size of strings can be increased or decreased by adjusting the number 15 in the DIM statements, though if one is changed the same change must be made in the other DIM statements

If you do want to wipe out your data to start a new index, option 3 of the menu will do that and return you to the [illegible]

It should be noted that each entry can be up to 15 characters in length. A typical entry is Subject "PROG LISTING"; Title "CHECKMATE" and Magazine "HCW 59": To search through the index select the option from the menu and you'll be asked to enter a single item — title, subject or magazine but not more than one. Also the item must be in exactly the same form as when it was saved.

How it works

- **5-50** DIMension arrays, set index counter to zero, CLEAR all data
- **55-90** print menu
- **100-150** GOSUBs and GOTOs [illegible]
- **200** SAVE "QUICK INDEX"
- **500-690** enter data sub-routine
- **1000-1290** search index sub-routine

```
  1 REM "QUICK INDEX"
  2 REM BY P.PANTZIARKA
  5 CLS
 10 LET I=0
 20 LET T=150
 30 DIM S$(T,15)
 40 DIM M$(T,15)
 50 DIM T$(T,15)
 55 CLS
 60 PRINT AT 0,10,"QUICK INDEX"
 70 PRINT AT 3,13,"MENU"
 80 PRINT AT 6,8,"1. ENTER NEW
DATA";AT 9,8,"2. SEARCH";AT 12,8
,"3. START NEW INDEX";AT 15,8,"4
. SAVE TO TAPE"
 90 PRINT AT 21,8;"ENTER 1,2,3
 OR 4"
100 INPUT N
110 IF N=1 THEN GOSUB 500
120 IF N=2 THEN GOSUB 1000
130 IF N=3 THEN GOTO 1
140 IF N=4 THEN GOTO 200
150 GOTO 60
200 SAVE "QUICK INDEX"
210 GOTO 60
220 STOP
500 REM DATA ENTRY
505 CLS
510 LET I=I+1
520 PRINT "ENTER SUBJECT"
530 INPUT N$
540 LET S$(I)=N$
550 PRINT "ENTER TITLE"
560 INPUT N$
570 LET T$(I)=N$
580 PRINT "ENTER MAGAZINE"
590 INPUT N$
600 LET M$(I)=N$
610 CLS
620 PRINT AT 3,6;"SUBJECT  ";S$
(I);AT 6,6;"TITLE    ";T$(I);AT
9,6;"MAGAZINE ";M$(I)
630 PRINT AT 12,3;"IS ENTRY COR
RECT? (Y/N)"
640 IF INKEY$="" THEN GOTO 640
650 IF INKEY$="N" THEN GOTO 520
660 IF INKEY$="Y" THEN PRINT "D
O YOU WANT TO RETURN TO THE   M
ENU OR TO ENTER NEW DATA KEY M F
OR MENU OR D FOR DATA"
670 INPUT N$
680 IF N$="D" THEN GOTO 500
685 IF N$="M" THEN CLS
690 RETURN
1000 REM SEARCH ROUTINE
1010 LET X=0
1015 CLS
1020 PRINT "ENTER ONE ITEM TO SE
ARCH"
1025 INPUT Q$
1030 LET Z=LEN Q$
1035 LET Y=15-Z
1040 FOR Z=1 TO Y
1045 LET Q$=Q$+" "
1050 NEXT Z
1055 LET X=X+1
1060 IF Q$=S$(X) OR Q$=T$(X) OR
Q$=M$(X) THEN GOTO 1200
1070 IF X=T THEN PRINT "ITEM NOT
 IN INDEX"
1080 IF X=T THEN GOTO 1250
1090 GOTO 1050
1200 PRINT AT 3,6;"QUERY    ";Q$
;AT 6,6;"SUBJECT  ";S$(X);AT 9,6
;"TITLE    ";T$(X);AT 12,6;"MAGA
ZINE ";M$(X)
1210 PRINT
1220 PRINT "CONTINUE SEARCH WITH
 SAME QUERY? (Y/N)"
1230 INPUT N$
1240 IF N$="N" THEN CLS
1245 IF N$="Y" THEN GOTO 1055
1250 PRINT "RETURN TO MENU? (Y/N
)"
1260 INPUT N$
1270 IF N$="N" THEN GOTO 1000
1280 IF N$="Y" THEN CLS
1290 RETURN
```

Imagine you're a snake — and you're hungry...

How much fruit can you eat without touching the deadly bushes? That's the challenge from HCW regular David Ryan, whose game runs on any Atari

In this program for the 16K Atari computers you control a snake which must move about in a walled garden eating the fruit which is lying around while avoiding the different bushes — especially the semi-visible ones!

As each piece of fruit is eaten the snake's body increases in length and starts moving more quickly, thus making it more difficult to eat more fruit.

To control your snake just plug a joystick into player 1 joystick port and away you go.

Take care when entering the data statements in this listing as they make up several machine code routines in the program. One small mistake could ruin everything. Saving the program at regular intervals is advised.

Conversion

Because of the machine code routines in this program it could be quite difficult to convert to other machines although the basic idea would be relatively easy to implement on other machines.

How it works

1-47 introduction
49-900 main game routine
1000-1010 sound off
2000-2080 lives check
2500-2550 new game
4000-4990 bite self
5000-5990 bite bush
6000-6080 bite fruit
7000-7990 hit wall
8000-8050 new bush
9000-9100 introduction screen
9500-9980 choose wall pattern
9999-10040 set up machine code snake co-ordinates
10045-10110 display list interrupt routine
19999-30060 redefine character set

```
10 GRAPHICS 17:GOSUB 10000:LENG=PEEK(285):LX=48*256:LY=
   [illegible],0
20 JS=14:POKE 756,ST/256:WALL=56+148:SNAKE=1:FRUIT=49+3
2:BUSH=58+192:SC=0:NSC=5:HI=0:LVS=5
25 DLIST=PEEK(560)+256*PEEK(561):FOR G=6 TO 26:POKE DLI
ST+G,6+128:NEXT G:POKE 512,58:POKE 513,6:POKE 54286,192
30 SETCOLOR 1,12,10:SETCOLOR 2,3,4:SETCOLOR 0,0,0
35 COLOR WALL:PLOT 0,1:DRAWTO 19,1:DRAWTO 19,21:DRAWTO
0,21:DRAWTO 0,1:GOSUB 9000
40 POSITION 0,0:? #6;" SNAKE    pattern ";COUNT
45 POSITION 0,22:? #6;"SCORE   lives  HIGH"
47 FOR E=1 TO 50:COLOR 0:PLOT X,Y:SOUND 0,E,10,10:COLOR
 SNAKE:PLOT X,Y:SOUND 0,0,0,0:NEXT E
49 REM MAIN GAME ROUTINE
50 JS=STICK(0):IF JS=15 OR JS=10 OR JS=6 OR JS=9 O
R JS=5 THEN JS=JS
60 JS=JS*2:POSITION 0,23:? #6;SC:POSITION 10,23:? #6;LVS
:POSITION 15,23:? #6;HI
65 POKE 77,0:IF FLAG=1 AND STRIG(0)=0 THEN SETCOLOR 4,7
,15:FOR E=1 TO 300:NEXT E:SETCOLOR 4,0,0:POP :GOTO 9500
70 NX=X+(JS=7)-(JS=11):NY=Y+(JS=13)-(JS=14)
80 LOCATE NX,NY,Z
90 IF Z=SNAKE THEN GOSUB 4000
100 IF Z=BUSH THEN GOSUB 5000
110 IF Z=WALL THEN GOSUB 7000
120 COLOR 1:PLOT NX,NY:L=USR(1536):POKE LX,NX:POKE LY,N
Y:X=NX:Y=NY
125 COLOR 0:PLOT PEEK(LX+LENG),PEEK(LY+LENG)
130 IF Z=FRUIT THEN GOSUB 6000
140 IF SC=NSC THEN GOSUB 8000
150 IF FLAG=0 AND Z=BUSH OR Z=WALL OR Z=SNAKE THEN 47
160 FOR E=1 TO 42-PEEK(285):NEXT E
170 SOUND 0,1,10,10:SOUND 1,2,10,10:GOSUB 1000
200 IF FLAG=1 THEN RETURN
900 GOTO 50
1000 REM SOUND OFF
1010 FOR A=0 TO 3:SOUND A,0,0,0:NEXT A:RETURN
2000 REM LIVES CHECK
2005 IF FLAG=1 THEN LVS=LVS+1:RETURN
2010 FOR A=LENG TO 0 STEP -1
2020 COLOR 0:PLOT PEEK(LX+A),PEEK(LY+A):POKE LX+A,0:POK
E LY+A,0
2030 SOUND 0,A,10,10:SOUND 1,A+1,10,10:SOUND 2,A+2,10,1
0:SOUND 3,A+3,10,10
2040 NEXT A:GOSUB 1000
2050 IF LVS=0 THEN 2500
2060 POSITION 0,23:? #6;SC:POSITION 10,23:? #6;LVS:POSI
TION 15,23:? #6;HI
2070 JS=14:NX=5:NY=14:POKE LX,NX:POKE LY,NY:POKE LX+1,0
:POKE LY+1,0
2080 RETURN
2500 REM NEW GAME
2510 FOR G=1 TO 5:FOR A=2 TO 20:POSITION 4,A:? #6;"GAME
  OVER":SETCOLOR 0,A,A:NEXT A:NEXT G
2520 SETCOLOR 0,0,0:IF SC>HI THEN HI=SC
2530 POSITION 0,23:? #6;SC:POSITION 10,23:? #6;LVS:POSI
TION 15,23:? #6;HI
2540 FOR E=1 TO 50:NEXT E
2550 POSITION 0,0:? #6;CHR$(125):POP :GOTO 35
4000 REM BITE SELF
4005 LVS=LVS-1
4010 FOR B=15 TO 0 STEP -1
4020 SOUND 0,200-B,10,A:SOUND 1,200-B-1,10,B:SOUND 2,20
0-B-2,10,B:SOUND 3,200-B-3,10,B
[illegible] SETCOLOR 1,0,0:NEXT B
[illegible] SETCOLOR 1,12,10:GOSUB 1000
[illegible] GOTO 2000
[illegible] REM BITE BUSH
[illegible] LVS=LVS-1
5010 FOR A=15 TO 0 STEP -1
5020 SOUND 0,10,6,A:SOUND 1,11,8,A:SOUND 2,12,10,A:SOUN
D 3,13,12,A:NEXT A
5030 GOSUB 1000
5990 GOTO 2000
6000 REM BITE FRUIT
6010 SC=SC+1
6020 FOR A=0 TO 15 STEP 1.5
6030 SOUND 0,119,8,A:SOUND 1,116,8,A:SOUND 2,17,A,A:SOU
ND 3,10,A,10:NEXT A
6040 GOSUB 1000
6050 FX=INT(RND(0)*18)+1:FY=INT(RND(0)*19)+1
6060 LOCATE FX,FY,G:IF G<>32 AND G<>0 THEN 6050
6070 COLOR FRUIT:PLOT FX,FY:POKE 285,PEEK(285)+1:LENG=L
ENG+1
6080 RETURN
7000 REM HIT WALL
7005 LVS=LVS-1
7010 FOR A=15 TO 0 STEP -1
7020 SOUND 0,200,8,A:SOUND 1,202,10,A:SOUND 2,202,14,A:
SOUND 3,203,14,A:SETCOLOR 2,A,A:NEXT A
7030 SETCOLOR 2,3,[illegible]
7040 GOSUB 1000
7990 GOTO 2000
8000 REM NEW BUSH
8010 BX=INT(RND(0)*18)+1:BY=INT(RND(0)*20)+1
8020 LOCATE BX,BY,G:IF G<>32 AND G<>0 THEN 8010
8030 COLOR BUSH:PLOT BX,BY
8040 IF FLAG=1 THEN RETURN
8050 NSC=NSC+5:GOTO 50
9000 REM INTRODUCTORY SCREEN
9010 POSITION 0,22:? #6;"SCORE   lives  HIGH":FLAG=1:X=
2:Y=3:POKE LX,X:POKE LY,Y:COLOR FRUIT:PLOT 2,5:POKE 285
,0
9015 LENG=PEEK(285):POKE LX+LENG,10:POKE LY+LENG,10:NSC
=SC+10
```

ATARI PROGRAM

```
9020 POSITION 8,6:? #6;"SNAKE":POSITION 5,9:? #6;"push
 fire"
9025 FOR E=1 TO 20:GOSUB 9000:NEXT E
9030 FOR R=1 TO 13
9035 J8=7:GOSUB 60:NEXT R
9040 FOR R=1 TO 14:J8=13:GOSUB 60:NEXT R
9050 FOR R=1 TO 15
9060 J8=11:GOSUB 60:NEXT R
9070 FOR R=1 TO 16:J8=14:GOSUB 60:NEXT R
9100 GOTO 9030
9500 REM CHOSE WALL PATTERN
9510 POSITION 5,0:? #6;CHR$(125):COUNT=1
9520 COLOR WALL:PLOT 0,1:DRAWTO 19,1:DRAWTO 19,21:DRAWT
O 0,21:DRAWTO 0,1
9530 POSITION 6,0:? #6;"CHOOSE WALL PATTERNS"
9540 POSITION 6,22:? #6;"MOVE STICK TO CHOOSE"
9550 POSITION 6,23:? #6;" PUSH fire TO start"
9560 RESTORE 9700+10*COUNT
9570 READ J,K,M,N:IF J=-1 THEN 9600
9580 COLOR WALL:PLOT J,K:DRAWTO M,N:GOTO 9570
9600 IF STRIG(0)=0 THEN 9600
9610 IF STICK(0)<>15 THEN SETCOLOR 4,10,15:FOR E=1 TO 5
0:NEXT E:SETCOLOR 4,0,0:GOTO 9630
9620 GOTO 9600
9630 NCOUNT=COUNT+1:IF NCOUNT>3 THEN NCOUNT=0
9640 RESTORE 9700+10*COUNT
9650 READ J,K,M,N:IF J=-1 THEN 9670
9660 COLOR 0:PLOT J,K:DRAWTO M,N:GOTO 9650
9670 COUNT=NCOUNT:GOTO 9540
9680 FOR A=200 TO 0 STEP -10:SOUND 0,A,A,10:SOUND 1,A+1
,A,10:SOUND 2,A+2,A,10:SOUND 3,A+3,A,10:NEXT A
9690 GOSUB 1000
9700 DATA -1,0,0,0
9710 DATA 10,2,10,10,10,15,10,20,-1,0,0,0
9720 DATA 1,5,15,5,5,10,10,10,1,15,15,15,-1,0,0,0
9730 DATA 10,5,10,15,5,15,15,15,-1,0,0,0
9740 DATA 1,5,15,5,15,5,10,10,10,15,6,15,6,15,6,10,-1,0
,0,0
9750 DATA 10,5,10,20,10,5,15,5,13,15,10,15,1,10,5,10,-1
,0,0,0
9810 X=5:Y=14:POKE LX,X:POKE LY,Y
9820 J8=14:SC=0:NSC=0:LVS=5
9830 POSITION 0,0:? #6;CHR$(125):FLAG=0
9840 COLOR WALL:PLOT 0,1:DRAWTO 19,1:DRAWTO 19,21:DRAWT
O 0,21:DRAWTO 0,1
9850 RESTORE 9700+10*COUNT
9860 READ J,K,M,N:IF J=-1 THEN 9900
9870 COLOR WALL:PLOT J,K:DRAWTO M,N:GOTO 9860
9900 FOR E=1 TO 2:GOSUB 6850:NEXT E
9910 POKE 205,2:LENG=PEEK(205)
9920 POKE LX+LENG,0:POKE LY+LENG,0
9930 RETURN
9999 REM SET UP N'CODE FOR COORDS
10000 DATA 104,169,0,166,205,189,0,40,232,157,0,40,202,
202,224,255,208,243,169,0,166,205,189,0,42,232,157
10010 DATA 0,42,202,202,224,255,208,243,96,-1
10020 RESTORE 10000:FOR A=1536 TO 2000:READ X:IF X=-1 T
HEN 10040
10030 POKE A,X:NEXT A
10040 FOR A=40*256 TO 40*256+800:POKE A,0:NEXT A
10045 REM DISPLAY LIST SET UP
10050 RESTORE 10100:FOR A=1586 TO 2000:READ X:IF X=-1 T
HEN 10070
10060 POKE A,X:NEXT A
10070 FOR A=0 TO 40:POKE (256*44+A),(INT(RND(0)*17)*15)
+0:NEXT A
10100 DATA 72,138,72,238,206,0,173,206,0,187,0,44,141,1
0,212,141,25,208,224,21,208,5,169,0,141,206,0
10110 DATA 104,170,104,64,-1
19999 REM REDEFINE CHARACTER SET
20000 POKE 106,PEEK(106)-5:GRAPHICS 17:ST=(PEEK(106)+1)
*256:POKE 756,ST/256
20010 DIM XFR$(38):RESTORE 20050:FOR A=1 TO 38:READ C:X
FR$(A,A)=CHR$(C):NEXT A
20020 Z=USR(ADR(XFR$)):RESTORE 30000
20030 READ X:IF X=-1 THEN RETURN
20040 FOR Y=0 TO 7:READ Z:POKE Y+X+ST,Z:NEXT Y:GOTO 200
30
20050 DATA 104,169,0,133,203,133,205,169,224,133,206,16
5,104,24,105,1,133,204,160,0,177,205,145,203,200,208,24
9
20060 DATA 230,204,230,206,165,204,201,228,208,237,96
29998 REM SNAKE
30000 DATA 0,60,126,255,255,255,255,126,60
30010 REM FRUIT
30020 DATA 392,0,2,36,24,60,126,126,60
30030 REM BUSH
30040 DATA 464,144,74,41,42,20,20,62,127
30050 REM WALLS
30060 DATA 440,251,0,223,223,223,0,251,251,-1
```


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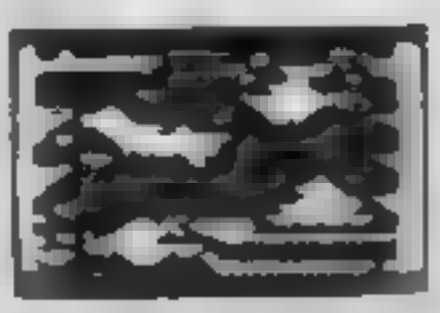

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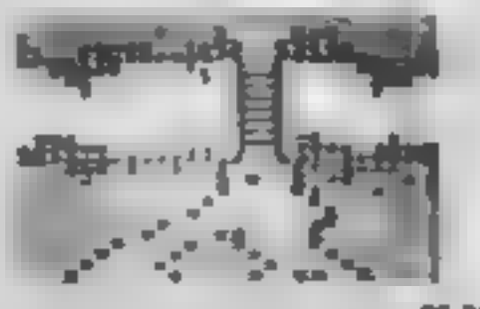

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Letters Letters Letters Letters Letters Letters Letters Letters Letters Letters Letters Letters

Try and try again

I just had to put pen to paper in response to the letter in issue 84 by Paula Le Page, of Guernsey (why the heading Angry of Mayfair?)

I am in full agreement with her in regard to her comments about Jet Set Willy-type cheating I'm sure everyone who can read knows how to cheat (and therefore defeat the original object of the game, i e challenge).

I agree that on games like Revenge it is nice to see the last 10 screens, but when the program writer has put so much hard work and effort into producing it in the first place, don't you think it's fair to respond to that effort and simply try harder to complete the game or adventure?

I for one relish a challenge and if I don't manage the first time, like the proverbial spider, I try and try again.

Regarding all this squabbling about who has the better computer, if I had the money I'd have one of each But since I haven't, I will settle for my treasured CBM 64

As Paula said, let everybody get on with his or her own computer's capabilities and force every last scrap of ROM/RAM out of it

Speaking of which, anyone who has seen Zaxxon in the arcades just has to own U S Gold's version (official) for the 64 It is absolutely fandabadozie, great, fantastic, tremendous, etc , etc An arcade classic brought into your own home and the loading screen/music is great too.

My record on it so far, after one day, is 71,200 on the fourth level I m sure it's not a record, but on the other hand?

Keep up the good work, HCW Must go now, my 64 is calling.

Ian Robertson, Sunbury-on-Thames, Middx

P S As for Bernadette Barron, in the same issue, she wants to be shot If a game is not worth buying, why the blue blazes copy it? Had my car not been worth the money I paid for it, I certainly would not have stolen it, which is exactly the same principle My humble opinion only, you understand.

Our headline referred to the character of the same name in Kenny Everett's TV show

Micro pal

Please would you print in your magazine that I would like a computer pen pal, aged 13-17, with a BBC B. We could swap ideas, magazines etc Also any programs that he/she had written. If you could spare the space in your magazine I would be very grateful My address is 296 Newton Road, Rushden, Northants, NN10 0SY

Mark Gidley, Northants

Beat that!

I would like to answer J Hudson's question which appeared in HCW 84, about the score achieved on Automania Yes, I have beaten it with a score of 7453 (code MSCBAWk) and I was only at the start of the fifth car So please could you tell me how you only scored 885, just failing to reach the sixth car, a score which I exceeded on the second car?

Andrew Head, Wimbledon

P S I am a proud owner of a 48K Spectrum

Amstrad

I write to assure "Lonely from Bognor" that she is not the only Amstrad owner in the country I have one as well Like her I too find it a bit tiresome reading about the alien zapping achievements of others, I may change my attitude when I get Codename MAT

Have other Amstrad Club members experienced long delays in getting orders delivered?

The main reason for my purchase of a computer was to help in the management of voluntary enterprises that I am involved in e g tenants' associations and similar Word processing is very important in this area of activity so it was neccessary to get a printer as quickly as poss ble I chose the Brother HR 5 and to date I am very pleased with it

One thing I wish I had to hand is a database program. I wrote to Amstrad, asking if they were going to make one available, shortly after getting my machine, and to date I have yet to get a reply Can anyone help me?

However, enough of the gripes. Like Linda of Bognor I believe the CPC 464 is a good machine, I just wish Amstrad/Amsoft would get their act together in order to provide a first class back up service for club members

Cyril G Bezant, Birmingham

Graphic design

I would like to know if any TI 99 4A owners can help me

For a long time I have been trying to animate my graphics as in the professional games.

If anyone knows how to do this I would be grateful if they would let me know

Steven Miller, Preston

Bug plug

You may be interested in this bug I have found in the TI-99 4A

First enter line 10 with a PRINT statement, leave one space, put in quote marks and four lines of characters ending in quote marks In this you have 101 characters.

Now enter this line and EDIT it move the cursor to the last character and press a key and you will go on to line five End this line in quote marks and enter on this new line 129 characters

Now EDIT this new line, move the cursor to the last character and again press a key and you will go on to line six

In this line only enter 25 characters and end in quotes. You now have 155 characters in six lines instead of 102 characters in four lines This will run in programs

Stephen Dykes, Lincolnshire

TI users group

HCW readers may like to learn of a Texas Instrument users club in the north east of England We meet on the first Thursday in every month in room D103 in the Newcastle upon Tyne polytechnic from 7 to 9 pm There are also two marathon meetings at the Newcastle Central Library on November 3 and 17 from 10 am to 4.30 pm.

We help all ranks of programmers and we also cater for games players. We have a large range of TI hardware and software for demonstration and we can also purchase a large amount of software from the States.

New members are always welcome. If it's your first visit, ask for Phil or Errol. Further details can be obtained from me at the address below — please enclose an s.a.e.

Phil Coates, 5 Saville Place, Newcastle upon Tyne, NE1 8DQ

Whoops!

The gremlins have been at your listings again! For frustrated adventurers who typed in Lost from HCW 83 issue, the following alterations are required

10 Add CLS after INK 7
30 Change DIM 9$ (24,95)
Add **215** IF P = 24 THEN PAUSE 80 GOTO 530
1600 Change LET P = 2 to LET P = 22
Add **1710** RETURN
2050 Replace LET 9$ (10) = etc with LET 9$ (10,64 TO) = "There is a pile of logs here"

Tom Frost, Angus

Computing neglected

My school has recently bought two computers and of course when everybody heard about this we all got very excited I own a Commodore VIC 20 but I have never learnt anything about programming so I was very much looking forward to studying this at school

However, now we have been told that we will not learn computing until we are in the fourth form This means that I will have to wait two whole years before I am taught properly

I think this is very unfair since I enjoy using my computer so much that I think I would do very well in this subject at school

I know that it's probably not the school's fault since there aren't enough computers for everyone to use, but I do think that it is really unfortunate that such an important subject should be neglected like this

After all we will all be using them when we go out to work (or so everyone keeps telling us) and I think it is a great shame that pupils have to wait so long before being educated in this interesting subject

Have any other HCW readers got any opinions on this subject? If so I would very much like to read about them

John Gray, Aberdeen

Piracy the continuing debate

I read with interest Bernadette Barron's letter, Give Us A Break, in HCW 84

It would appear from her letter (and many like it in HCW) that the majority of the micro owning public are not aware of the law as regards replication of commercial software This is not surprising, since it is in the interest of the software business to have us believe that copying is illegal and that we should be spat upon from a great height for doing so

Let me clarify this inaccuracy for the good of mankind, but the disgrace of the software industry

It is in fact perfectly legal to reproduce your own favourite games tape however many times you like but for personal use only This means that you are permitted to copy cassettes — and even give them to your friends providing that no exchange of money is made In other words, you must give the tapes to your friends for free The moment you charge for the copy be it £3 or 1p, then you are acting illegally

Please note that the explanation given above also applies to music and audio cassettes

Having given this information to you, I deny any responsibility for illegal copying and please note that I do **not** approve of software piracy in any form

Stephen Williams, Porthcawl

Software winner

Send your letters to Letters, Home Computing Weekly, No.1 Golden Square, London W1R 3AB Don't forget to name your computer — the best letter could win £5-worth of software. Got a problem with your micro? We'll soon be starting a queries page, so send your technical questions to Queries at the above address

Buy my fizzy pop

Now's the time to take on some responsibility by running a fizzy drinks stand for a week. Peter Wiseman's program puts you into the competitive street-corner retail trade

Phew! It's thirsty work being a top lemonade seller, trying to sell more drinks than Mr Fizz across the road. Then there's Mr Bubbles round the corner, rolling in the cash with his new Triple Tonsil Tangler.

I didn't do too well last week when we had a wet spell that lasted for six days. All my posters got washed down. Do you think you can do better?

Well, now's your chance because you are taking over Fizzy Pop stall for a week. So get ordering your drinks, putting up the price list and posters, and please be nice to the customers. I don't want to return to find no customers anymore.

I'm going now for my week's holiday. Good luck! You never know, you might be a millionaire next week!

Fizzy Pop was written on a Dragon 32 taking just under 7K. Full instructions are included in the program. Just type in the program and SAVE it just like a normal BASIC program. There is a short machine code routine starting at location 31000 which is 26 bytes long. The routine is used to simulate the effect of rain falling from a cloud. The effect is achieved by printing a raindrop under the cloud. Then they are cleared off the screen. After about 50 raindrops have fallen from the cloud, a tune is played.

There is a short subroutine to transfer M (J) to X$ and put in a decimal point. E.G. If M (J) was 5000, then X$ would be "50.00" after: GOSUB 1910.

This is done by.

POKE 1143 + RND(7)

If the variable W is 1 (heavy rain) then another raindrop is printed. The raindrops are then scrolled diagonally by:

EXEC 31000

Variables

M(1-3)
A$-C$
A-C normal use
P(1-3) posters
PP(1-3) potential customers
PW(1-3) posters washed down
E number of stalls
D day
TP temperature
J loop for stalls
W weather
L(1-3) number of cups of lemonade
O(1-3) number of cups of orangeade
G(1-3) number of cans of ginger beer
LS(1-3) price of lemonade per cup
OS(1-3) price of orangeade per cup
GS(1-3) price of ginger beer per can
LI(1-3) amount of lemonade sold
OI(1-3) amount of orangeade sold
GI(1-3) amount of ginger beer sold

How it works

10 reserves memory for m/c
30-70 store m/c in memory
80-260 draw title screen
270-330 instructions
340-360 ask for number of players
370-380 set up variables
390-460 print the day
500-730 buying routine
740-890 print players stock
820-930 input prices
940-1320 draw weather graphics
1210 plays Singing In The Rain
1300 plays The Sun Has Got His Hat On
1320 plays tune for cloudy weather
1330-1460 print weather and temperature
1470-1670 work out how much drink sold
1680-1760 print end of day stock
1770 next player
1780-1790 check for end of week
1800-1870 end of week
1880-1930 change M(J) to X$ with decimal point

Hints on conversion

It should be fairly easy to convert Fizzy Pop to other micros. The machine code is only for the graphics so is not really necessary. You can make up your own graphics routines PRINT @ is the Dragon way of PRINTing at different places on the screen PRINT @0,"" is the top left hand corner. PRINT @ 511,"" is the bottom right hand corner

PROGRAM

```
0 PCLEAR4:CLEAR 500,31000:A=RND(-TIMER)
20 'MACHINE CODE TO SCROLL RAIN
30 FOR A=31000 TO 31025:READ A$:POKE A,VAL("&H"+A$):NEXTA
40 DATA 8E,05,0E,86,00,E6,84,E7
50 DATA 88,1F,30,01,4C,81,07,26
60 DATA F4,30,88,DB,8C,04,73,22
70 DATA EA,39
80 'DRAW TITLE SCREEN
90 CLS3:A$=CHR$(159):B$=CHR$(170):C$=CHR$(165)
100 PRINT@43,CHR$(174);STRING$(8,172);CHR$(173);
110 PRINT@75,CHR$(170);STRING$(8,175);CHR$(165);
120 PRINT@107,CHR$(171);STRING$(8,163);CHR$(167);
130 FOR A=1 TO 10:PRINT@76,"fizzypop";:PLAY"V5L1403CDEFGAB":PRINT@76,"FIZZYPOP"
;:PLAY"V5BAGFEDC":NEXTA
140 PRINT@268,B$A$A$A$CHR$(154);A$A$C$;
150 PRINT@300,B$A$A$A$;CHR$(149);A$A$C$;
160 PRINT@333,CHR$(162);A$;CHR$(154);A$A$;CHR$(161);
170 PRINT@365,B$A$;CHR$(149);A$A$C$;
180 PRINT@398,CHR$(162);A$A$;CHR$(161);
190 PRINT@471,CHR$(128);CHR$(128);
200 PRINT@462,CHR$(168);CHR$(128);CHR$(128);CHR$(164);
210 PRINT@236,B$;:PRINT@241,C$;:PRINT@243,C$;
220 PRINT@209,B$;:PRINT@178,C$;
230 PRINT@0,STRING$(32,207);:FOR A=1056 TO 1504 STEP32:POKE A,207:POKE A+31,207:
NEXTA:PRINT@481,STRING$(30,207);
240 FOR A=138 TO 150:PRINT@A,MID$("PRESS ANY KEY",A-137,1);:PLAY"V502L255CA":NEX
TA
260 A$=INKEY$:IF A$="" THEN GOTO 260
270 'INSTRUCTIONS
280 CLS
290 PRINT@12,"FIZZYPOP";:PRINT@43,"==========="
300 PRINT" 1 TO 3 PLAYERS CAN PLAY FIZZY   POP.THE OBJECT OF THE GAME IS   TO SE
E HOW MUCH PROFIT YOU      CAN MAKE AT THE END OF THE      WEEK BY BUYING LEMONA
DE.        ORANGEADE AND GINGER BEER AND   THEN SELLING THEM AT A HIGHER"
310 PRINT" PRICE.EACH PLAYER CAN PUT UP    POSTERS TO ADVERTISE THEIR      STALL
 BUT IF IT RAINS, SOME      MAY GET WASHED AWAY."
320 PRINT:PRINT"  PRESS ANY KEY TO PLAY";
330 A$=INKEY$:IF A$="" THEN GOTO 330
340 CLS
350 PRINT"HOW MANY PLAYERS (1-3)"
360 A$=INKEY$:IF A$<"1" OR A$>"3" THEN 360
370 FOR A=1 TO 3:M(A)=5000:P(A)=0:NEXTA:D=1:E=VAL(A$):W=3
380 FOR J=1 TO E:A2=M(J):B=0
390 CLS:PRINT"     PLAYER";J;"  ";
400 IF D=1 THEN PRINT"MONDAY"
410 IF D=2 THEN PRINT"TUESDAY"
420 IF D=3 THEN PRINT"WEDNESDAY"
430 IF D=4 THEN PRINT"THURSDAY"
440 IF D=5 THEN PRINT"FRIDAY"
450 IF D=6 THEN PRINT"SATURDAY"
460 IF D=7 THEN PRINT"SUNDAY"
470 A$=STRING$(32,32)+STRING$(32,8):M(J)=A2:P(J)=P(J)-B
480 GOSUB 1890
490 PRINT@96,"MONEY=";X$;" POUNDS"
500 PRINT:PRINT"HOW MUCH LEMONADE AT 5P PER CUP ";A$;
510 INPUT A
520 IF M(J)-(A*5)<0 OR A<0 OR A<>INT(A) THEN SOUND 5,1:GOTO 490
530 M(J)=M(J)-(A*5)
540 GOSUB 1890
550 PRINT@96,"MONEY=";X$;" POUNDS"
560 PRINT:PRINT"HOW MUCH ORANGEADE AT 6P PER CUP";A$;
570 INPUT A1
580 IF M(J)-(A1*6)<0 OR A1<0 OR A1<>INT(A1) THEN SOUND 5,1:GOTO 550
590 M(J)=M(J)-(A1*6)
600 GOSUB 1890
610 PRINT@96,"MONEY=";X$;" POUNDS"
620 PRINT:PRINT"HOW MUCH GINGER BEER AT 10P PER CAN ";A$;
```

```
630 INPUT C
640 IF M(J)-(C*10)<0 OR C<0 OR C<>INT(C) THEN SOUND 5,1:GOTO610
650 M(J)=M(J)-(C*10)
660 GOSUB 1890
670 PRINT896,"MONEY=";X$;" POUNDS"
680 PRINT:PRINT"POSTERS ALREADY UP=";P(J):PRINT
690 PRINT:PRINT"HOW MANY POSTERS AT 1 POUND EACH";A$;
700 INPUT B
710 IF M(J)-(B*100)<0 OR B<0 OR B<>INT(B) THEN SOUND 5,1:GOTO 670
720 M(J)=M(J)-(B*100):P(J)=P(J)+B
730 L(J)=L(J)+A:O(J)=O(J)+A1:G(J)=G(J)+C
740 CLS:PRINT@12,"FIZZYPOP":PRINT@43,"==========="
750 PRINT:PRINT"LEMONADE......";L(J);"CUPS"
760 PRINT"ORANGEADE.....";O(J);"CUPS"
770 PRINT"GINGER BEER...";G(J);"CANS"
780 PRINT"POSTERS.......";P(J)
790 PRINT:PRINT"DO YOU WANT TO CHANGE ANYTHING ?";
800 B$=INKEY$:IF B$<>"Y" AND B$<>"N" THEN 800
810 IF B$="Y" THEN L(J)=L(J)-A:O(J)=O(J)-A1:G(J)=G(J)-C:GOTO 790
820 'SELLING PRICES
830 CLS
840 PRINT@12,"FIZZYPOP":PRINT@43,"==========="
850 PRINT@96,"WHAT PRICE DO YOU WANT TO SELL  LEMONADE AT (PENCE)";A$;
860 INPUT LS(J):IF LS(J) 0 OR LS(J)<>INT(LS(J)) THEN SOUND 1,5:GOTO 850
870 PRINT@160,"WHAT PRICE DO YOU WANT TO SELL  ORANGEADE AT (PENCE)";A$;
880 INPUT OS(J):IF OS(J)<0 OR OS(J)<>INT(OS(J)) THEN SOUND 1,5:GOTO 870
890 PRINT@224,"WHAT PRICE DO YOU WANT TO SELL  GINGER BEER AT (PENCE)";A$;
900 INPUT GS(J):IF GS(J)<0 OR GS(J)<>INT(GS(J)) THEN SOUND 1,5:GOTO 890
910 PRINT:PRINT"DO YOU WANT TO CHANGE ANYTHING ?";
920 B$=INKEY$:IF B$<>"Y" AND B$<>"N" THEN 920
930 IF B$="Y" THEN 830 ELSE NEXTJ
940 'WEATHER
950 CLS
960 IF W=1 THEN W=RND(3)+1 ELSE IF W=2 THEN W=RND(4) ELSE IF W=3 THEN W=RND(5) E
LSE IF W=4 THEN W=RND(4)+1 ELSE IF W=5 THEN W=RND(3)+1
970 IF W>3 THEN CLS3 ELSE IF W=3 THEN CLS6
980 PRINT@332,STRING$(10,159);
990 PRINT@364,CHR$(159);STRING$(8,32);CHR$(159);
1000 PRINT@396,CHR$(159);STRING$(8,32);CHR$(159);
1010 PRINT@428,STRING$(10,159);
1020 PRINT@460,CHR$(159);"fizzypop";CHR$(159);
1030 PRINT@492,STRING$(10,159);
1040 IF W>3 THEN 1240
1050 'DRAW CLOUD
1060 IF W=3 THEN FOR A=64 TO 77 ELSE FOR A=64 TO 86
1070 B=PEEK(1504)
1080 IF B=96 THEN B=0 ELSE IF B=223 THEN B=80
1090 PRINT@A,CHR$(B+143);CHR$(B+139);STRING$(6,B+128);CHR$(B+135);
1100 PRINT@A-32,CHR$(B+143);STRING$(8,B+128);
1110 PRINT@A-64,CHR$(B+143);CHR$(B+142);STRING$(6,B+128);CHR$(B+141);
1120 NEXTA
1130 IF W=3 THEN 1320
1140 'RAIN GRAPHICS
1145 PMODE3,1:PCLS:IF W=1 THEN SCREEN1,1:PLAY"O1L255V10CD":SCREEN0,0:PLAY"CGFDGA
FV20CGAFDV10CBAGDFEGV5BCGAFDGV1BAGFDGF"
1150 FOR C=1 TO 40
1160 IF C>30 THEN A=1024:B=1024:GOTO 1190
1170 IF W=1 THEN A=1143+RND(7)
1180 B=1143+RND(7):POKE B,111:IF W=1 THEN POKE A,111
1190 EXEC 31000:POKE B,96:IF W=1 THEN POKE A,96
1200 NEXTC
1210 PLAY"V5L602GL403GL12EL8DL12CL302AL6GL403CL12CL8DL12EL3G"
1220 GOTO 1340
1230 'SUN GRAPHICS
1240 PRINT@33,CHR$(166);STRING$(5,175);CHR$(169);
1250 PRINT@66,CHR$(166);CHR$(175);CHR$(172);CHR$(175);CHR$(169);
1260 PRINT@98,CHR$(174);STRING$(3,128);CHR$(173);
1270 PRINT@130,CHR$(171);STRING$(3,128);CHR$(167);
1280 PRINT@162,CHR$(169);CHR$(175);CHR$(163);CHR$(175);CHR$(166);
```

PROGRAM

```
1290 PRINT@193,CHR$(169);STRING$(5,175);CHR$(166);
1300 PLAY"V503L6C02L8FA03CFDL3C02L8FA03CAL3GL8FEE£DEC02A£03C02AA£G03C02L3F"
1310 GOTO 1340
1320 PLAY"V502L8GEL4CL7D01BL3GL6AF£DL5F£L4GL3AL2G"
1330 'END OF DAY REPORTS
1340 FOR J=1 TO E
1350 CLS:PRINT"PLAYER";J;" REPORT AT END OF DAY :";STRING$(32,"=");
1360 PRINT"WEATHER :";
1370 IF W=1 THEN PRINT"HEAVY RAIN":A1=10:TP=RND(5)+4
1380 IF W=2 THEN PRINT"RAIN":A1=30:TP=RND(6)+9
1390 IF W=3 THEN PRINT"CLOUDY":A1=50:TP=RND(5)+12
1400 IF W=4 THEN PRINT"SUNNY":A1=80:TP=RND(5)+18
1410 IF W=5 THEN PRINT"SUNNY":A1=100:TP=RND(5)+23
1420 PRINT"TEMPERATURE :";TP;"C"
1430 'POSTERS WASHED DOWN
1440 IF W=1 AND P(J)>0 THEN PW(J)=RND(P(J))
1450 IF W=2 AND P(J)>0 THEN PW(J)=RND(P(J)/2)
1460 IF PW(J)<>0 THEN PRINT"POSTERS WASHED DOWN BY RAIN:";PW(J):PRINT"POSTERS RE
MAINING :";P(J)-PW(J):P(J)=P(J)-PW(J)
1470 'WORK OUT HOW MUCH SOLD
1480 IF D=6 OR D=7 THEN A1=A1*1.6
1490 B=13-LS(J):B=B*6.5:B=INT(B):IF LS(J)<4 THEN B=100
1500 A=A1+RND(10):A=A+((P(J)*RND(A1/40))/2)
1510 C=(A+B)/2:IF C>100 THEN C=100
1520 IF LS(J)>15 THEN C=0
1530 LL(J)=(L(J)/100)*C
1540 B=15-OS(J):B=B*6.7:B=INT(B):IF OS(J)<4 THEN B=100
1550 A=A1+RND(10):A=A+((P(J)*RND(A1/40))/2)
1560 C=(A+B)/2:IF C>100 THEN C=100
1570 IF OS(J)>15 THEN C=0
1580 OL(J)=(O(J)/100)*C
1590 B=21-GS(J):B=B*6.4:B=INT(B):IF GS(J)<6 THEN B=100
1600 A=A1+RND(10):A=A+((P(J)*RND(A1/40))/2)
1610 C=(A+B)/2:IF C>100 THEN C=100
1620 IF GS(J)>22 THEN C=0
1630 GL(J)=(G(J)/100)*C
1640 LL(J)=INT(LL(J)):OL(J)=INT(OL(J)):GL(J)=INT(GL(J))
1650 M(J)=M(J)+LS(J)*LL(J)
1660 M(J)=M(J)+OS(J)*OL(J)
1670 M(J)=M(J)+GS(J)*GL(J)
1680 PRINT:PRINT"                DRINK    DRINK    DRINK"
1690 PRINT"              STOCK    SOLD     LEFT"
1700 PRINT"LEMONADE";TAB(11);L(J);TAB(19);LL(J);TAB(27);L(J)-LL(J);:L(J)=L(J)-L
L(J)
1710 PRINT"ORANGEADE";TAB(11);O(J);TAB(19);OL(J);TAB(27);O(J)-OL(J);:O(J)=O(J)-
OL(J)
1720 PRINT"G.BEER";TAB(11);G(J);TAB(19);GL(J);TAB(27);G(J)-GL(J);G(J)=G(J)-GL(J)
1730 GOSUB 1890
1740 PRINT:PRINT"MONEY=";X$;" POUNDS"
1750 PRINT"PRESS ANY KEY";
1760 B$=INKEY$:IF B$="" THEN 1760
1770 NEXT J
1780 FOR A=1 TO 3:PW(A)=0:NEXT A
1790 D=D+1:IF D<8 THEN 300
1800 'END OF WEEK
1810 CLS:PRINT"AT THE END OF THE WEEK":PRINTSTRING$(32,"=");
1820 FOR J=1 TO E:PRINT"PLAYER";J;"=";:GOSUB1890:PRINTX$;" POUNDS"
1830 IF M(J)<=5000 THEN PRINT"NO PROFIT" ELSE PRINT"A PROFIT OF ";:M(J)=M(J)-500
0:GOSUB1890:PRINTX$;" POUNDS"
1840 PRINTSTRING$(32,"-");:NEXT J
1850 PRINT"ANOTHER GAME ?"
1860 A$=INKEY$:IF A$<>"Y" AND A$<>"N" THEN 1860
1870 IF A$="Y" THEN RUN ELSE PRINT"GOODBYE":END
1880 'PUT M(J) INTO X$ WITH A          DECIMAL POINT
1890 X$=RIGHT$(STR$(M(J)),2)
1900 IF LEN(STR$(M(J)))=2 THEN X$=".0"+RIGHT$(X$,1):RETURN
1910 X$=LEFT$(STR$(M(J)),LEN(STR$(M(J)))-2)+"."+X$
1920 X$=RIGHT$(X$,LEN(X$)-1)
1930 RETURN
```

Look closely at your Amstrad

Brian Lewis shows you in detail how this keyboard organ program and ASCII generator works. Cross refer to your user manual

This program demonstrates many of the Amstrad's advanced features while giving a useful insight into the inner workings of ASCII code. It's a keyboard organ program and ASCII generator.

The program is split into two parts: lines 100 to 280 produce the first screen, and by pressing any key — excluding break — a musical note and the ASCII code associated with it are produced. When more than 50 notes are sounded part two of the program (lines 290-530) plays all 50 notes consecutively with three voices.

Note. All variables have been printed in lower case. Both loops have been indented by four spaces. If more than one space is left, it is specified.

This has been done so that you can follow the program more easily and it is recommended that it is adopted as a standard on all Amstrad public domain programs.

Variables

- **t** mid voice
- **s** high voice (s = tx2)
- **u** low voice (u = t/2)
- **a** note array
- **b** count variable 1-50
- **k$** value of key pressed
- **k** ASCII value of key pressed
- **x** toggle between the two messages

How it works

•Cross-references are to Amstrad user manual

100 Defint ch 8, p 10: sets all variables to integer values to save memory. Try replacing Defint with Def real and run program by escaping out and print Fre("") to see memory saving

110 Zone ch 8, p 53; ch 3, p 6 changes print zone width, i.e. sets comma tab stops to column 0,10,20,30 etc when using zone 10

130 Every ch 8, p 17: timing command used for printing in window #2. Every 100 = 2 seconds. See also lines 500-530

140 Mode ch 8, p 28: mode 0 = 20 columns, mode 1 = 40 columns, mode 2 = 80 columns

160-170 Window ch 8, p 52 screen window command. Line 160 opens a window in screen centre and scrolls the ASCII code independently of rest of screen. Line 170 opens a window at bottom right of screen only and displays, in this example, lines 500-530

• Amendment to book, ch 8, p 52: example should include #1, 10,30,7,18

180-200 Pen ch 8, p 34: sets pen for window 1 to ink 1, pen for window 2 to ink 1. No ink command is issued so ink 1 is default colour yellow.

• Amendment to book ch 8, p 34 example should read Pen #1,2 not Pen 1,2

210-280 While, Wend ch 8, p 51 loop commands which terminate when a command is true, i.e. b<50

• Amendment to book appendix III, page 1: ASCII characters should read DEC 1 = CTRL(A), DEC 2 = CTRL(B)

290 return to mode 1, 40 column screen

300-340 two windows are used again but with different colours. In this mode there is a choice of four out of a possible 27. Try listing in #1 or #2, i.e. type LIST #2 to see what happens after escaping out of program. Window #1 is ink 3, window #2 is ink 2 so defaulting to red and light blue

360 ensures that keyboard buffer is flushed during execution of program

350-390 plays all 50 notes consecutively with the lower and higher overtones purposely out of synchronization, to give a feeling of life and movement. Try putting voices back into synchronization for comparison or use envelopes for more sophisticated sounds. Ch 6, p 8

400 prints ASCII code for all three voices

410-430 Sound defaults to value 4 if not specified. Max number is 7 if no envelope is used. **Compare** lines 410 to 420,430

440-460 plays the notes and then starts again with screen 1

500-530 prints these messages alternatively in the #2 window

```
100 DEFINT a-z
110 ZONE 10
120 DIM a(50)
130 EVERY 100,1 GOSUB 500
140 MODE 2
150 b=0
160 WINDOW #1,1,40,3,22
170 WINDOW #2,55,80,24,24
180 PEN #1,1
190 PEN #2,1
200 PRINT"        NOTE NUMBER          ASCII VALUE"
210 WHILE b<50
220     k$=INKEY$:IF k$="" THEN 220
230     k=ASC(k$)
240     b=b+1
250     a(b)=k
260     PRINT #1,,b,,a(b)
270     SOUND 1,k,10
280 WEND
290 MODE 1
300 WINDOW #1,1,40,3,22
310 WINDOW #2,18,40,24,24
320 PEN #1,3
330 PEN #2,2
340 PRINT"NOTE          A          B          C"
350 FOR b=1 TO 50
360     k$=INKEY$
370     t=a(b)
380     s=t*2
390     u=t/2
400     PRINT #1,b,s,t,u
410     SOUND 1,s,40
420     SOUND 2,t,30,5
430     SOUND 3,u,20,6
440 NEXT b
450 GOTO 140
460     END
500 IF x=0 THEN PRINT #2,"Amstrad Keyboard Organ"
510 IF x=1 THEN PRINT #2,"by David & Brian Lewis"
520 x=1-x
530 RETURN
```

Keeping track of time

Do you need to know what date falls on which day? This program from R. W. Hatfield will help

If you have problems with dates, and we're talking about the calendar not the dried fruit, then this perpetual calendar program will be of invaluable help

The screen displays the complete calendar for the year and month selected, and use of left and right cursor keys causes the following or preceeding month to be scrolled on to the screen

Conversion should be straightforward as no user defined graphics are involved

Output to screen is entirely performed by display statements.

If you're the type of person that doesn't know whether it's Monday, Thursday or Christmas this is the program for you.

How it works

100-200 instructions and title
210-420 initialisation
430-480 accepts input for year and month and converts month to numeric value
490-860 main loop as follows
520-580 evaluates instructions from keyboard
620-630 makes adjustments for ordinary and centenial leap years
670-760 calculates which day the month begins
810-910 provides screen display and calls for next instruction

Variables

Arrays: CAL$, Month$, Day$ hold data for screen display
Y input year
MD$ input month
D month number
L leap year
T no. of complete years
S total of day advances for each year, leap year, and centenial leap year (every 400 years)
ML complete months
PL print list for dates
DS start point for day display

```
100 ! PERPETUAL CALENDAR
110 !
120 ! R.W.HADFIELD
130 !
140 CALL CLEAR
150 PRINT "    PERPETUAL CALENDA
R          ------------------":
:"BASED ON THE GREGORIAN      CA
LENDAR ADOPTED BY GREAT   BRITAI
N IN 1752"
160 PRINT "--------------------
-------": :
170 PRINT "ENTER YEAR & MONTH RE
QUIRED.": : :"TO CHANGE DISPLAY
USE KEYS-": : :"S..FOR PRECEDING
 MONTH": :"D..FOR FOLLOWING MONT
H": :
180 PRINT "ENTER..FOR NEW YEAR &
 MONTH": :"E..TO EXIT": :"ANY KE
Y..TO CONTINUE"
190 CALL KEY(0,K,STA):: IF STA=0
 THEN 190
200 CALL CLEAR :: PRINT "BY R.W.
HADFIELD   (C)1982": : : : :"DEP
RESS ALPHA LOCK": : : :
210 !
220 ! INITIALISE
230 !
240 OPTION BASE 1
250 DIM CAL$(35)
260 DIM MONTH$(12)
270 DIM DAY$(13)
280 FOR A=1 TO 35
290 READ DATE$
300 CAL$(A)=DATE$
310 NEXT A
320 DATA 1,2,3,4,5,6,7,8,9,10,11
,12,13,14,15,16,17,18,19,20,21,2
2,23,24,25,26,27,28,29,30,31,,,,
330 FOR B=1 TO 12
340 READ M$
350 MONTH$(B)=M$
360 NEXT B
370 DATA JANUARY,FEBRUARY,MARCH,
APRIL,MAY,JUNE,JULY,AUGUST,SEPTE
MBER,OCTOBER,NOVEMBER,DECEMBER
380 FOR C=1 TO 13
390 READ D$
400 DAY$(C)=D$
410 NEXT C
420 DATA MON,TUE,WED,THU,FRI,SAT
,SUN,MON,TUE,WED,THU,FRI,SAT
430 !
440 ! INPUTS
450 !
```

```
460 CALL CLEAR :: DISPLAY AT(12,
3):"WHICH YEAR?" :: ACCEPT AT(12
,1)VALIDATE DIGIT SIZE 4 BEEP:Y
470 DISPLAY AT(14,3):"WHICH MONT
H?" :: ACCEPT AT(14,17)VALIDATE(
UALPHA)SIZE(9)BEEP:MD$
480 D=(POS("JANFEBMARAPPMAYJUNJU
LAUGSEPOCTNOVDEC",SEG$ MD$,1,3)
1)+2)/3 :: IF D=0 THEN 470 :: CA
LL CLEAR :: GOTO 620
490 !
500 ! START OF LOOP
510 !
520 IF CHR$(K)="E" THEN 910 :: I
F K=13 THEN 460 :: IF CHR$(K)="S
" THEN 530 :: IF CHR$(K)="D" THE
N 540 ELSE 900
530 D=D-1 :: GOTO 550
540 D=D+1
550 IF D=13 THEN D=1 ELSE 570
560 Y=Y+1
570 IF D=0 THEN D=12 ELSE 620
580 Y=Y-1
590 !
600 ! LEAP YEARS
610 !
620 L=(Y/4-INT(Y/4)>0)
630 IF Y/100=INT(Y/100)AND NOT Y
/400=INT(Y/400)THEN L=-1
640 !
650 ! SET DAYS
660 !
670 T=Y-1
680 S=T+INT(T/4)-INT(T/100)+INT(
T/400)
690 RESTORE 740
700 FOR A1=1 TO D
710 READ ML :: S=S+ML
720 NEXT A1
730 READ PL :: IF L=0 AND D=2 TH
EN PL=PL+1
740 DATA 0,31,28,31,30,31,30,31,
31,30,31,30,31
750 IF L=0 AND D>2 THEN S=S+1
760 DS=S-(INT(S/7)*7)+1
770 !
780 ! DISPLAY
790 !
800 CALL CLEAR
810 DISPLAY AT(1,2):MONTH$(D);Y
820 FOR P=6 TO 24 STEP 3
830 DISPLAY AT(P,2):DAY$(DS):: D
S=DS+1
840 NEXT P
850 X=1
860 FOR CL=8 TO 24 STEP 4 :: FOR
 R=6 TO 24 STEP 3
870 IF X>PL THEN 890
880 DISPLAY AT(R,CL):USING ("##"
):CAL$(X):: X=X+1
890 NEXT R :: NEXT CL
900 CALL KEY(3,K,STA):: IF STA=0
 THEN 900 ELSE 520
910 END
```


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Death Star Interceptor
CBM 64 £9.99

System 3

The packaging for this game describes it as 'graphically amazing' I would not say this but it is very good. You need a colour monitor to be able to appreciate, or even play it.

On the first screen you guide your ship up a runway and through a hole at the far end External forces affect your movement

In screen two the aliens swoop down firing missiles. In one corner is the earth, opposite this is the alien planet. When you shoot the master alien you are taken onto the planet surface.

Next you fly through a trench and shoot similar beings to the [illegible]

graphics do not give much reality as they lack depth. On black and white monitors this is merely guess work as the colours are similar shades of grey.

Next you encounter walls which you must avoid crashing into, and you must shoot master aliens which, when exploded, fire at you

Bugs were encountered from time to time which added a different, but not very original, dimension to it.

This game needs a joystick.

K.I.

instructions	30%
playability	75%
graphics	70%
value for money	75%

★★★★★

Spaceman Sid
32K Electron
£7.95

English Software, Box 43, Manchester M60 3AD

This game is another version of the old favourite Moon Patrol Every time such games hit the market they have a story line, this time it is a spaceman who has to guide his combat rover across the wastelands of the moon to recapture the dilithium crystal mines from the Martians.

As you continue with your mission you will be confronted by alien drones flying by at low level. To destroy them you need your front lasers. You need the back lasers to destroy the flying saucers

You have to jump over ditches and sub-sector markings. There are five sub-sectors and when you have crossed all these you enter a new one where all your concentration is required

The graphics are good but the game lacks originality. A greater variety of aliens with their special features could have made this better than other versions. There are three levels of play. At each level it becomes more and more difficult to survive. This program comes with a lifetime replacement guarantee.

It's not a game to go over the top about, nevertheless an enjoyable one.

M.B.

instructions	80%
playability	75%
graphics	85%
value for money	75%

★★★★★

Braxx Bluff
48K Spectrum
£6.95

Micromega, 230-236 Lavender Hill, London SW11 1LE

This is a mixture of inter-active story and arcade games. You are the pilot of a rescue vessel sent to the last ailing crew of a previous mission. Your task has five phases: Lander, Walker, Land-Crawler, Sea-Crawler and return to Mother Ship

A series of weird noises and unfamiar screens shows Micromega's anti-copy loader working. It seems to take an age, but the graphics are superb when they arrive. The mother ship hovers over you. Define your keys/joystick, then listen to the music... it's really catchy! Dive down through the atmosphere of the planet, graphically stunning, but you'll be too intent on your instruments to see that much, which is sad because the 3D runway is quite something. Odd on you won't make it first time.

When you do, save your game to tape, it only takes a second, because as you start the walker phase you'll be attacked by a large and nasty creature! Get killed, and you're back to the beginning... unless you did save your game.

Graphics, sound and player facilites are all of extra quality here. It's really quite outstanding, with an intriguing plot.

D.M.

instructions	80%
playability	100%
graphics	100%
value for money	85%

★★★★★

The galaxy — and beyond

Launch yourself into space with these exciting games which take you to the four corners of the universe

Intravoid
48K Spectrum
£6.95

Delta 4, The Shieling, New Rd, Swanmore, Hants SO3 2PE

The uninformative, 'roneoed' cassette insert heralds a poor, non-graphic adventure game, made using The Quill. An unimaginative, bland title screen, drawn using Melbourne Draw, leads to simple instructions in redefinable character set.

You slowly work out the vocabulary that the program accepts — though there is no 'help' nor 'score' You start in Zagro spaceport in search of The Crystal and can move to the Main City Complex, Landing Bay or Engineering Centre. On the journey you can 'Get food', 'Get drink' and 'Pick up laser probe' as well as other items.

At one teleport [illegible]

teleport to another place, while at another unit you cannot. Also, you can enter and move about in a Spacecruiser, but how do you get off? I couldn't, so I quit Next time round I went too near the Disintegrator — when the game ended I had scored zero.

There is sound and little use of colour, and a fair idea has not been developed enough to make it interesting or addictive. The one good idea is the use of enlarged computer style character set

T.W.

instructions	50%
playability	40%
graphics	N/A
value for money	30%

★★

Dark Star
48K Spectrum
£7.50

Design Design, 125 Smedley Rd, Manchester M8 7RS

Dark Star looked, at first glance, much, like other arcade games, but later it became obvious that this was something special

Spectacular graphics are becoming the norm with Spectrum games, and on Dark Star the effects are better than most. The object is to wipe out the enemy, but you do so with superb moving star effects, swiftly moving enemy craft, all while a realistic digital clock gently ticks away at the top of the screen. And you can check your position and status on the Tactical Sector Map.

The enemy are on several planets as well as in space, so you can attack enemy planets, land on them, and attempt to destroy enemy bases on land

Lots of extras are included in a very professional program. User definable keys (plus joystick options), user selectable sound effects, and program options to give you a wide variety of games.

On the reverse side is another program called 'Spectacle' This is useable only with passwords, which will be announced sometime in the future

D.N.

instructions	80%
playability	90%
graphics	80%
value for money	90%

★★★★★

CHARTBUSTERS

BRITAIN'S SOFTWARE CHARTS

ARCADE

1	Daley Thompson Decathlon	Ocean	Spectrum (1)
2	Monty Mole	Gremlin	[illegible]
[illegible]		U.S. Gold	[illegible]
4	Jet Set Willy	Software Projects	Spectrum (2)
5	Kokotoni Wilf	Elite	Spectrum (5)
6	Zaxxon	U.S. Gold	[illegible]
7	Danger Mouse	Creative Sparks	Spectrum (-)
8	Combat Lynx	[illegible]	Spectrum (-)
9	Spitfire Ace	U.S. Gold	[illegible]

NON-ARCADE

1	Elite	Acornsoft	BBC (-)
2	Twin Kingdom Valley	Bug-Byte	Spectrum (2)
[illegible]		Melbourne Hse	Spectrum (4)
[illegible]		Mind Games	Spectrum (1)
[illegible]		Automata	Spectrum (-)
5	Hampstead	Melbourne Hse	Spectrum (7)
7	World Cup Football	Artic	CBM 64 (5)
[illegible]	Football	Mind Games	CBM 64 (-)
9	All or Nothing	Abbex	Spectrum (-)
10	Star Trader	Bug-Byte	CBM 64 (-)

Compiled with the assistance of Britain's leading software distributors, including: Pinnacle, SDL, PCE, Websters, PCS and Software Centre.

SPECTRUM

1	Daley Thompsons [illegible]	[illegible]
[illegible]		[illegible]
5	Combat Lynx	Martech (-)
[illegible]		Mikro-Gen (-)
5	Peter Pan	Hodder (-)
[illegible]		Sinclair (6)
7	World Cup	[illegible]
8	Jet Set Willy	S Projects (7)
9	Strange Loop	Virgin (-)
10	Tornado Low Level	Vortex (-)

COMMODORE 64

1	Sherlock (2)	[illegible]
2	Zaxxon	[illegible]
3	Chiller	[illegible]
4	Jet Set Willy	S Projects (1)
5	P C Fuzz	Anirog (-)
6	Daley Thompsons Decathlon	[illegible]
[illegible]		Mastertronic (-)
[illegible]		Quicksilva (-)
[illegible]		CDS (-).
[illegible]		Mastertronic (-)

DRAGON 32

1	Hunchback	Ocean (1)
2	Skramble	Microdeal (-)
3	Cuthbert in Space	[illegible]
4	Mr Dig	[illegible]
5	Kriegspiel	[illegible]
6	The King	[illegible]
7	Ring of Darkness	[illegible]
8	Chuckie Egg	A & F (7)
9	Sprint	Oasis (-)
10	Dragon Fly	Hewson (-)
=	Eightball	Microdeal (10)

Compiled by W. H. Smith and Websters. Figures in brackets are last week's positions.

VIC-20

1	Punchy	Mr Micro (3)
2	Duck Shoot	Mastertronic (1)
3	Flight 015	Craig Comms (4)
4	Max	Anirog (5)
5	Snooker	Visions (-)
[illegible]		Quicksilva (-)
7	Tower of Evil	Creative Sparks (8)
[illegible]		Mastertronic (-)
[illegible]		Ultimate (9)
10	Undermine	[illegible]

BBC

1	Jet Pac	[illegible]
2	Elite	Acorn (5)
3	Scrabble	[illegible]
4	Castle of Gems	MRM (7)
5	Frak!	[illegible]
6	Kensington	Leisure Genius (2)
7	Mini Office	[illegible]
8	Twin Kingdom Valley	Bug-Byte (-)
9	Killer Gorilla	[illegible]
[illegible]		Acornsoft (-)

ZX81

1	Krazy Kong	PSS (1)
2	Black Crystal	PSS (3)
3	Hopper	PSS (-)
=	Planet Raider	Novus (-)
=	Invaders	Quicksilva (-)
6	Krypton Ordeal	Novus (4)
7	Walk the Plank	[illegible]
8	Espionage Island	Sinclair (5)
9	Toolkit	Sinclair (5)
10	Chess II	[illegible]

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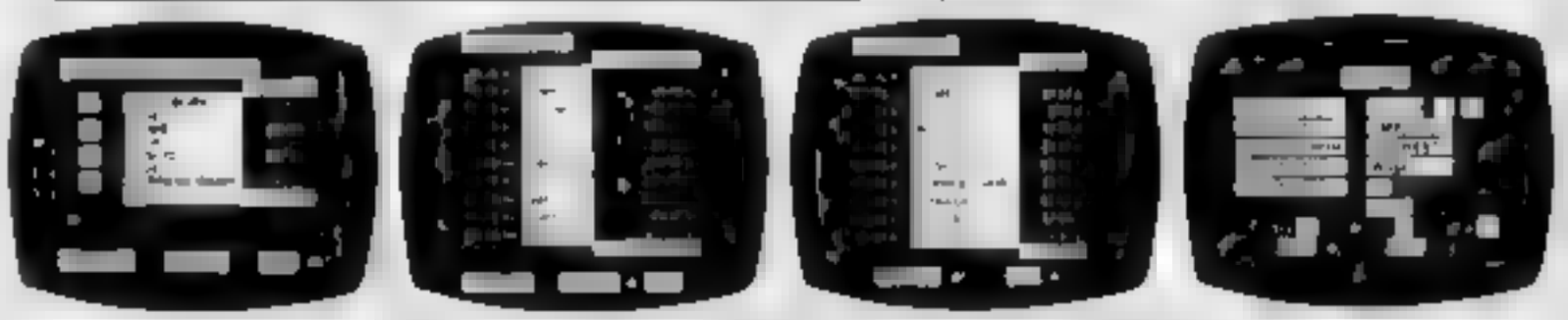
ADDRESS MANAGER and ***FINANCE MANAGER*** utilise the same "on the page" presentation and offer 48K Spectrum owners a 'professional standard' address filing, indexing retrieval, and financial analysis system. Below are examples of the screen presentations.
Both have been carefully constructed to provide the user with a tool that is extremely friendly and easy to use, the speed and presentation of these programs are second to none

ADDRESS MANAGER features MULTIPLE INDEXING via our 3 way 3 character index, an ability to store over 400 full names and addresses or 1500 individual names/titles.
USES include storing and updating names, addresses and phone numbers, printing out Xmas card lists, etc, mail order work, customer classification by type size (doctors have used this program to catalogue patients by treatment).

FINANCE MANAGER is a powerful, flexible and fast MENU DRIVEN general purpose program carefully designed to handle up to 255 separate accounts for domestic and business accounting applications. The magic of MACHINE CODE has enabled us to produce the very latest "on the page" presentation which lets you enter and edit data naturally, as if with a pencil and paper. That's not all, not by a long way. This program automatically raises a corresponding debit or credit for every entry, and will even open up a new account if an entry features an unrecorded account name

Voted **"The best value financial program available"** by **Sinclair** user.



Accounts can be **MERGED, DELETED, ANALYSED, MARKED** as priority, **RENAMED, EDITED** and **SCROLLED.** Transactions can be **RECONCILED, AMENDED, DELETED, PRINTED, DESCRIBED** for analysis and **RENAMED.** Standing orders can be **APPLIED, REMOVED, DESCRIBED, AMENDED, DELETED** and even **DUMMIED** for planning purposes. Other features include **DATE CHANGE, RUNNING TOTALS, 2 KEYBOARD MODES, PRINT PAGE/ LINE/BLOCK/FROM END/FROM START/FROM DATE etc., LIST BALANCES, FIELD ERASE/INSERT/DELETE, EXIT TO BASIC.** You may not want all these features but they are there just in case

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SOFTWARE ★ ★ ★ ★ SIMPLY THE BEST

Win four games for the BBC from Warlock Software

In this week's competition we're offering great games for your BBC from Warlock Software

Our competition this week gives 40 readers the chance to win a great prize — four games from Warlock Software.

The games are: Galactic Patrol, Tycoon, Devil's Causeway and Balloonacy and they're all for the BBC B

Warlock Software was formed about six months ago and has already had one game for the BBC at the top of the charts, Spectipede. Now Warlock is releasing a batch of four games and these are the ones on offer this week

Galactic Patrol was written by a Cambridge astophysics graduate and contains over 100 pages of pure machine code. It is an arcade/adventure game and the graphics are in 3D. There are five screens and five different skill levels.

You play a pilot in the Galactic Patrol and your mission is to protect earth colonists from attack by hostile aliens. At the beginning of the game you watch over them as they enter the transporter ship and continue your task as the ship makes its way through space. The ship has a protective shield but its strength varies depending on the skill of the pilot.

Other hazards include a failure aboard the transporter ship which makes it lose energy so that the colonists have to be evacuated and taken back to base. This necessitates flying through your own very efficient defences and you have to cope with your own force fields.

When you finally arrive back at your HQ, the passengers must disembark to allow you to return for another batch of survivors. Every time you return the mission gets more difficult.

Devil's Causeway incorporates games within a game. The basic format is a maze but as you work your way through it, various subsidiary games are called up which you must complete to continue on your way

Balloonacy places you in a balloon gliding through a dangerous sky. Time limits are the essence of this game. If you don't achieve your object within the time specified then a barrier closes and you're stuck.

Tycoon is different again. It's a property speculation game with first class graphics and sound

This is definitely a competition well worth entering since there's such a wealth of prizes. Study the two cartoons, read the advice we give you on this page and good luck!

How to enter

Study the two cartoons — there are a number of differences between them. Circle the differences on carton B and seal the cartoon and coupon in an envelope. Write clearly the number of differences you found on the back of the envelope.

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You may enter as many times as you wish, but each entry must be on an official coupon — not a copy — and sealed in a separate envelope

Important: please follow carefully the guidelines on entering — incomplete coupons and entries in envelopes with no numbers on the back cannot be considered. If you are a winner, the coupon will be used as a label to send your prize so clear writing is essential

The rules

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